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VOLUME 91 (2d Series)

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Subject Digest

Action, Appealable

Board will grant extraordinary relief and stay proceeding even though appeal is not authorized. Filing of proposed findings would result in irreparable injury in view of state court ruling ordering specific performance of proposed settlement agreement.
-Hanover Radio, Inc.
BC Docket No. 80–664

Initial Decision

This initial decision is pertinent to the subsequent Commission action in this docket, FCC 82–428, appearing in Vol. 91, FCC 2d, pamphlet no. 4, dated January 1–31, 1983.
-City of N.Y. Municipal B/cing System
Docket No. 11227

Settlement

(See: Action, Appealable-*Hanover Radio, Inc.*).

Stay

(See: Action, Appealable-*Hanover Radio, Inc.*)

Initial Decision

This initial decision is pertinent to the subsequent Commission action in this docket, FCC 82–428, appearing in Vol. 91, FCC 2d pamphlet no. 4, dated January 1–31, 1983.
-*City of N.Y. Municipal B/cing System*
Docket No. 11227

FCC 78D–36

BEFORE THE

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D. C. 20554

In re Applications of	
CITY OF NEW YORK MUNICIPAL BROADCASTING SYSTEM (WNYC) New York, New York	DOCKET NO. 11227 File No. BSSA–266
For Special Service Authorization to operate additional hours from 6 AM (EST) to sunrise New York, New York and from sunset Minneapolis, Minnesota to 10 PM (EST)	
CITY OF NEW YORK MUNICIPAL BROADCASTING SYSTEM (WNYC) New York, New York	DOCKET NO. 17588 File No. BP–16148
MIDWEST RADIO-TELEVISION, INC. (WCCO) Minneapolis, Minnesota	DOCKET NO. 19403 File No. BP–19151
For Construction Permits	

Appearances

Alfred J. Tighe, Jr., *Charles S. Rhyne*, and *David M. Dixon* (Rhyne &

Rhyne), *Thomas P. Brown, III, Sheila Mahony, J. Lee Rankin, Norman Redlich, Evelyn Junge, Eugene Margolis, Adrian P. Burke, Gary Mailman, Joseph Bruno,* and *John C. Brennan* on behalf of the City of New York Municipal Broadcasting System; *Jack P. Blume, Peter Shuebruk, Benito Gaguine, Alan B. Kaufman,* and *Jerome S. Boros* (Fly, Shuebruk, Blume, Gaguine, Boros & Schulkind) on behalf of Midwest Radio-Television, Inc.; *Lawrence Schwab* and *Peter W. Sipkins* on behalf of the State of Minnesota; *Stanley Cohen* (Cohn and Marks) on behalf of WHAS, Inc.; *Robert D. Powell* on behalf of the National Business Aircraft Association; *Charles J. Peters* on behalf of the Aircraft Owners and Pilots Association; and *Walter C. Miller, Thomas B. Fitzpatrick, P. W. Valicenti, Roderick K. Porter,* and *Arthur I. Steinberg* on behalf of the Chief, Broadcast Bureau, Federal Communications Commission.

Supplemental Initial Decision of Administrative Law Judge Frederick W. Denniston

Issued June 15, 1978; Released June 29, 1978

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Foreword

1. Because of the number of issues involved and the inevitable tedious and lengthy decision, a brief summation is helpful to its understanding.

2. The Municipal Broadcasting System of the City of New York operates stations WNYC-AM, FM, and TV. It has operated its AM station here involved since 1924. WNYC-AM is regularly licensed for sunrise to sunset on 1 kW of power. This limits the sign-on time from 4:30 a.m. in June and July to 7:15 a.m. in December and January; and sign-off time, from 5:30 p.m. in December to 9:00 p.m. in June and July. Since 1943, however, under Special Service Authorization (SSA), the Commission has permitted WNYC-AM to operate from 6:00 a.m. to 10:00 p.m. uniformly throughout the year. Permanent right to use these added SSA hours is the initial authority sought here. Those hours range from ¼ hour to 1¼ hours in the mornings during November through March (in the remaining months sunrise is earlier than 6:00 a.m.) and from 1 hour to 4½ hours in the evenings through all 12 months. In this report these SSA hours are generally referred to as the WNYC-AM "nighttime" operation.

3. During those SSA hours, WNYC-AM causes interference to station WCCO, Minneapolis, Minnesota, which is a "clear channel" station operating on the same frequency due to the sky wave phenomena, which greatly expands its nighttime service area. In granting the SSA's over the years, the Commission has made it plain that the authorizations conveyed no permanent rights.

4. In 1954, the SSA application was set for hearing upon objection by WCCO and an Initial Decision was issued by the then Presiding Officer, Elizabeth C. Smith, on July 8, 1957, granting the SSA. As exceptions were filed, it did not become final but the Commission did not act on the matter due to the pendency of its docket on *Clear Channel Broadcasting*. A decision in that case in 1961, 31 FCC 565, made provision for the filing of an application for permanent authority, while reserving judgment thereon, and in its reconsideration report, 45 FCC 400, in 1962, noted that by a different directional pattern, it might be possible for WNYC-AM to operate at increased power with as much or even greater protection to WCCO. The Commission reactivated this proceeding on October 28, 1963, and thereafter WNYC-AM filed its application for permanent authority for the SSA hours and later for a change of antenna site and increase in power to 50 kW.

5. WCCO has vigorously opposed each phase of the proceeding. In 1971, it filed application to move its antenna site and erect a new type of antenna which will increase its interference to the WNYC-AM signal in the New York City area. That application is here considered, primarily on the issue

Again, in 1954, at the request of WCCO, a hearing was ordered on the pending SSA application and an Initial Decision was released July 8, 1957, proposing a grant of continued SSA authorization but found permanent authorization was not possible due to the pending decision in Docket No. hazard found by the Federal Aviation Administration and not controverted in this proceeding.

6. WNYC has made its own case difficult by failing to follow Commission guidelines and requirements as to ascertaining the community needs and programming (Issues 10, 11, and 12). It is concluded, nevertheless, that the public interest requires the granting of the 50 kW proposal which subsumes the request for permanent authority for the SSA hours for the present 1 kW operation.

7. A quotation from the 1957 Initial Decision of my predecessor, Elizabeth C. Smith is apt:

> . . . It is urged that a municipally-owned tax-supported radio station, especially one which is entirely non-commercial in its operation and devoted exclusively to the service, education, entertainment, recreation, health, welfare and safety of the citizens of the municipality in which it is located is an unusual phenomenon in and of itself; and that the needs of New York City are, by any standards, unusual, both in kind and degree. New York City is one of the largest, if not the largest urban concentrations in the world. Its government is second in size to the Federal Government. It is the headquarters of the United Nations. Its very size and the complexity of its problems create a need for almost every kind of service—for information on health and civil defense, for adult education, for opportunities for artistic development of its citizens, for assistance in the conduct of its government. . . .

Preliminary Statement

8. The City of New York Municipal Broadcasting System (WNYC) commenced broadcasting in 1924, or 53 years ago. Following several successive frequency assignments it was given 810 kc, but, following the North American Regional Broadcasting Agreement in 1941, was thereupon placed on 830 kc, the same frequency as station WCCO, Minneapolis, Minnesota, a Class I or clear channel station. Since then controversy has raged between WNYC and WCCO as a result of interference and the consequences thereof, due to the sky wave phenomena and the greatly increased coverage of WCCO at nighttime.

9. The Commission has considered this problem for a number of years. Since 1943, it has permitted WNYC, whose permanent authorization is from sunrise to sunset only, to operate additional hours of 6:00 a.m. (EST) to local sunrise and from sunset at Minneapolis to 10:00 p.m. (EST) on its authorized power of 1 kW, pursuant to Special Service Authorizations (SSA's). A WNYC attempt to obtain permanent authorization for addi-

tional hours was denied in 1942 (9 FCC 169) as being inconsistent with the Commission's Rule respecting the clear channel operation of WCCO. of whether it will be a menace to air navigation (Issue 14). For the reasons specified under that issue, that application would be denied because of the 6741, the *Clear Channel* proceeding.[1] Following exceptions and oral argument, however, no further action was taken due to the relationship to the *Clear Channel* case.

10. In 1961 in Docket No. 6741, *Clear Channel Broadcasting*, 31 FCC 565, (*Clear Channel* I herein), the Commission established Note 2 to Section 73.25, (originally Section 3.25, later renumbered) as follows:

> NOTE 2: In view of special circumstances arising from the provision of a service during some nighttime hours by a Class II station operating on 830 kHz at New York, N.Y. (i.e., from 6 a.m. to local sunrise and from sunset at Minneapolis to 10 p.m. e.s.t.), applications will be accepted for such operation: *Provided*, That they will be acted upon only after and in light of the decision reached in Docket No. 11227.

11. In its subsequent reconsideration (November 21, 1962) of the *Clear Channel* I decision, 45 FCC 400, (*Clear Channel* II) the Commission made it plain it was not passing on the merits of the WNYC application, and noted, in part:

> . . . There appears to be the possibility that, if WNYC should operate nighttime in a manner somewhat different than at present—e.g., with a different directional pattern and possibly a different transmitter site—it might be possible to operate with power greater than 1 kilowatt and still afford WCCO as much or even greater protection than at present. We do not wish, at this time, to foreclose such possibility. We emphasize, however, that we are not now passing on the merits of the question of operation during certain nighttime hours by WNYC (a question to be decided in Docket 11227). We emphasize also that it is not our intention to permit any nighttime operation by WNYC, whatever the power, which would increase radiation toward WCCO beyond that currently permitted under the special authorization.

By order released October 28, 1963 (FCC 63–978), the Commission reactivated Docket No. 11227 and directed a time within which the application contemplated by Note 2 might be filed, for consolidation herein. WNYC thereupon filed its application (Docket No. 11227) for permanent authority to operate 6:00 a.m. (EST) to 10:00 p.m. (EST) pursuant to that note.

12. On March 16, 1964, WNYC tendered its application, Docket No. 17588, for a construction permit to increase power to 50 kW, change

---

[1] That Initial Decision was not officially reported but may be found at 15 RR 565.

[2] Frederick W. Denniston has served as the Presiding Judge subsequent to October 14, 1975, FCC 75M–1764. At least three others had presided earlier but subsequently retired.

transmitter site and to operate during the stated hours of 6:00 a.m. (EST) and 10:00 p.m. (EST) and this was accepted for filing over WCCO objections on November 17, 1965, 1 FCC 2d 1370. This was confirmed on reconsideration (8 FCC 2d 1047, released July 12, 1967) by which time WCCO had filed its application for increase in power to 750 kW. The latter application was rejected by that order.

13. In 1971, WCCO filed its application for a change in transmitter site and type of antenna and this was accepted for filing by the Commission (33 FCC 2d 285, released January 25, 1972). In that decision, the Commission superseded prior specifications of issues with a new compilation. Subsequently, issues have been added so that the list outstanding are dealt with *seriatim* hereinafter and will not be stated here. Where necessary, issue numbers have been supplied.

14. While the Commission has characterized these applications as "mutually exclusive" (33 FCC 2d 285, par. 9), they are not so in the usual sense. Thus, given an adequate record, all applications could be granted.

15. Following the 1963 reactivation of the proceeding, hearings and conferences have been held herein at various dates from December 10, 1963 to June 2, 1977.[2] The record was finally closed on August 24, 1977, and the filing of proposed findings and replies was completed September 16, 1977.

16. WCCO and WNYC, as well as the Broadcast Bureau, have participated in all phases of the proceeding. The State of Minnesota, intervenor, supports the WCCO application and opposes WNYC and each filed proposed findings and replies, as did the Broadcast Bureau. On Issue 14, the air hazard issue relating to the proposed WCCO relocation and change of type of antenna, proposed findings and replies were filed as to that issue alone, by Aircraft Owners and Pilots Association (AOPA) and National Business Aircraft Association (NBAA) intervenors, as well.

17. While many of the findings proposed by the Broadcast Bureau have been accepted with minor revisions, others have been drastically revised. The filings of all of the parties have proved helpful in this disposition.

Findings of Fact

Issue 1

To determine the areas and populations which may be expected to gain or lose primary service from the proposed (a) daytime, and (b) presunrise and postsunset, operations of WNYC and the availability of other primary service to such areas and populations.

Daytime Gain and Loss of Primary Service

18. All of the ground wave contours for WNYC's present daytime operation are based on ground conductivities determined by 1957 proof of

performance measurements taken by WNYC. For distances beyond these measurements, conductivity values shown on FCC Figure M3 of Section 73.190 were used. Measurements were made as follows:

Bearing Degrees True	*Distance Miles*	*Bearing Degrees True*	*Distance Miles*
13	17	248	19
57	20.5	270	18.5
98	16	292	19.5
141	13	310	16.5
188	11	328	19.5
233	15.5		

Ground wave contours for WNYC's proposed 50 kW daytime operation were also based on the conductivity values shown on Figure M3 and on WNYC's proposed daytime horizontal plane pattern.

19. WNYC's 1 kW, daytime operation presently provides primary service to 11,533,500 persons within the station's 0.5 mV/m contour (interference-free) which encompasses an area of 3,240 square miles. The applicant's proposed 50 kW daytime operation would serve a population of 16,396,300 within an area of 12,500 square miles (WNYC Exhibit 72–102).

20. *Within New York City:* The 2.0 mV/m contour for WNYC's present 1 kW and proposed 50 kW daytime operation, encompasses all of New York City. Consequently, there is no primary service gain or loss within the city (WNYC Exhibit 72–102 and 72–110; Tr. 2324 and 2372).

21. *Outside New York City:* The areas and populations outside New York City that will gain or lose primary service as a result of WNYC's proposed 50 kW daytime operation are tabulated below (WNYC Exhibit 72–102):

	Population	*Area Sq. Mi.*
Urban gain	4,160,900	
Rural gain	910,700	
Total gain	5,071,600	9,300
Urban loss	199,200	
Rural loss	9,600	
Total loss	208,800	40
Net urban gain	3,961,700	
Net rural gain	901,100	
Net total gain	4,862,800	9,260

22. The net urban population within the New York SMSA that would gain primary service as a result of WNYC's proposed 50 kW daytime operation is distributed as follows (WNYC Exhibit 72–102; Tr. 2323). (The rural population of this area is estimated at 2.61 percent):

New York County	*Population*
Nassau	275,647
Rockland	215,287
Westchester	533,263
Total	1,024,197

This gain represents 25.9 percent of the 3,961,719 net urban population gain.

23. The urban population within the New York–Northeastern New Jersey Standard Consolidated Area (consisting of Middlesex and Somerset Counties in New Jersey and the SMSA's of New York, Newark, Jersey City and Paterson-Clifton-Passaic) excluding the New York SMSA, that would gain primary service from WNYC's proposed 50 kW daytime operation is distributed as follows (WNYC Exhibit 72–102):

New Jersey County	*Population*
Essex	80,270
Morris	199,931
Union	169,106
Bergen	312,785
Passaic	61,859
Middlesex	446,191
Somerset	104,587
Total	1,374,729

This gain represents 34.7 percent of the net urban population gain. The rural population is estimated at 4.5 percent.

24. The remainder of the net urban population that would have a gain of primary service as a result of WNYC's proposed 50 kW daytime operation is distributed as follows (WNYC Exhibit 72–102):

Location	*Population*	*Percent of Net Gain*
Philadelphia, Pa. SMSA	932,570	23.5
Trenton, N.J. SMSA	298,497	7.5
Stamford, Conn. SMSA	40,452	1.0
Other (including Orange, N.Y. and Monmouth and Ocean, N.J.)	291,274	7.4
Total	1,562,793	39.4

Aural Services Licensed Within the New York SMSA
Aural Services Licensed to New York City

25. Sixteen standard broadcast stations, twelve of which are full time, excluding WNYC, are licensed to New York City. These stations range in power and time of operation as shown below (WNYC Exhibit 72–52A):

Number of Stations	*Power Kilowatts*	*Time of Operation*
8	50	unlimited
1	10	limited
4	5	unlimited
2	5	share
1	5	share

26. In addition to the 12 full-time standard broadcast stations noted, *supra*, 16 Class B, FM stations, including WNYC-FM, are licensed to New York City (WNYC Exhibit 72–57A). Thus, 28 full-time, noneducational aural outlets, not including WNYC, are licensed to New York City.

27. Further, there are three educational FM stations licensed to New York City, all excess of 10 watts of power (Class D) (WNYC Exhibit 72–57A).

Aural Services Licensed Outside of New York City
But Within the New York SMSA

28. Fourteen standard broadcast stations, three of which are full time, are licensed to cities outside of New York City but within the New York SMSA. Three of these fourteen stations, including one full-time station, are located in Nassau County. Nine of the fourteen, including another full-time station, are located in Suffolk County. Two of the fourteen stations, including a third full-time station, are located in Westchester County. The power and time of operation of the above stations are as follows (WNYC Exhibit 72–52A):

Number of Stations	*Power Kilowatts*	*Time of Operation*
2	10	daytime
1	1/5-LS	unlimited
2	5	daytime
2	0.25/-LS	unlimited
6	1	daytime
1	0.25	daytime

29. In addition to the three full-time standard broadcast stations noted, *supra*, 15 noneducational FM stations are located outside of New York City but within the New York SMSA as follows (WNYC Exhibit 72–57A):

Class of Station	*Location*
Class A (2)	Nassau County
Class B (1)	Nassau County
Class A (6)	Suffolk County
Class B (1)	Suffolk County
Class A (4)	Westchester
Class B (1)	County Westchester County

Thus, there are 18 full-time, noneducational aural outlets within the New York SMSA, but outside of New York City.

30. There are also four educational FM stations licensed within the New York SMSA but outside of New York City. Two of these stations are located in Nassau County while a third is located in Suffolk County. The fourth is a Class D station (less than 10 watts of power) located in Westchester County (WNYC Exhibit 72–57A).

Total Full-time Noneducational Aural Outlets Within the New York SMSA

31. As previously indicated, 28 full-time, noneducational aural outlets, not including WNYC, are licensed to New York City and 18 such outlets are licensed outside of New York City but within the SMSA. Thus, 46 full-time, noneducational outlets are assigned within the New York SMSA.

Availability of Other Primary Services to Daytime Gain and Loss Areas

32. With the exception of three New Jersey communities within the gain area, there are at least five primary aural services available to all of the areas that would gain or lose service as a result of WNYC's proposed 50 kW daytime operation. The three New Jersey communities noted above are (WNYC Exhibit 72–102; Tr. 2322, 2324–2326):

Community	*Population*	*Available Primary Aural Services*
Beechwood	4,390	3
South Toms River	3,981	3
Toms River	7,303	4

Consequently, WNYC's proposed operation would provide a fourth primary aural service to Beechwood and South Toms River, and a fifth primary aural service to Toms River.

Presunrise and Postsunset Gain and Loss of Primary Service

33. All of the ground wave contours for WNYC's present 1 kW pre-

sunrise and postsunset operation, as authorized by the outstanding SSA, are based on ground conductivities determined by 1957 proof of performance measurements taken by WNYC. For the distances beyond such measurements, conductivity values shown on FCC Figure M3(R3) of Section 73.190 were used and differed only slightly from the daytime measurements (WNYC Exhibit 72–101). Ground wave contours for WNYC's proposed 50 kW presunrise and postsunset operation were also based on the conductivities shown on FCC Figure M3 (except along the path from Staten Island through Brooklyn and Queens where a higher effective conductivity based on measurements was used) (WNYC Exhibit 72–111; Tr. 2510) and on WNYC's proposed nighttime horizontal plane radiation pattern (WNYC Exhibit 72–101).

34. The calculated nighttime limitation to WNYC from the existing WCCO operation is to the former's 10.7 mV/m contour. The proposed WCCO operation would increase the limitation to the 12.7 mV/m contour (WNYC Exhibit 72–101, p. 4; WNYC Exhibit 72–102, pp. 2 and 3). The following is a comparison of the presunrise and postsunset predicted coverage of WNYC's present and proposed operation to the present and proposed WCCO nighttime limitation (WNYC Exhibits 72–102 and 72–111):

	Area Sq. Mi.	*Population*
1 kW SSA operation (10.7 mV/m)	138	4,388,100
1 kW SSA operation (12.7 mV/m)	124	3,971,500
Difference	14	416,600
Percent Difference Loss	10.14	9.49
Proposed 50 kW operation (10.7 mV/m)	658	9,926,159
Proposed 50 kW operation (12.7 mV/m)	570	9,466,507
Difference	88	459,652
Percent Difference Loss	13.37	4.63
Improvement over SSA (10.7 mV/m)	520	5,538,059
Percent Improvement Gain	376.81	126.21
Improvement over SSA (12.7 mV/m)	446	5,495,007
Percent Improvement Gain	359.68	138.36

Presunrise and Postsunset Service Within New York City

35. Both the 10.7 mV/m and the 12.7 mV/m contours of WNYC's present operation are wholly within New York City (WNYC Exhibits 72–102 and 72–111). Neither contour extends as far as Staten Island (Borough of Richmond), but each encompasses at least a portion of the other four boroughs of which New York is composed. The populations

therein and the total areas and populations are as follows (WNYC Exhibits 72–102 and 72–111; WCCO Exhibit 72–19):

	10.7 mV/m Contour		*12.7mV/m Contour*	
Location	*Area Sq. Mi.*	*Population*	*Area Sq. Mi.*	*Population*
Brooklyn	44	1,879,800	37	1,738,900
Bronx	7	166,900	5	66,200
Manhattan	13	778,900	10	665,200
Queens	75	1,562,500	69	1,501,200
Total	139	4,388,100	121	3,971,500
Portion of City	46.3%	55.6%	41.3%	50.3%

36. Both the 10.7 mV/m and the 12.7 mV/m interference-free contours of WNYC's present operation lie completely within the corresponding contours of the station's proposed operation. Thus, only gain and no loss areas would be involved (WNYC Exhibit 72–111, pp. 4 and 5). With the exception of two relatively small areas, one on the west coast of Staten Island and the other in northeast Queens, all of New York City would be within WNYC's proposed 10.7 mV/m and 12.7 mV/m contours (WNYC Exhibit 72–111, p. 5). The population that would gain and the totals that would receive services are distributed as follows (WNYC Exhibit 72–111, pp. 4 and 5):

	10.7 mV/m Contour		*12.7 mV/m Contour*	
	Population		*Population*	
Location	*Gain*	*Total*	*Gain*	*Total*
Brooklyn	722,212	2,602,012	863,112	2,602,012
Bronx	1,304,801	1,371,701	1,405,501	1,471,701
Manhattan	760,333	1,539,233	874,033	1,539,233
Queens	402,380	1,964,880	386,402	1,887,602
Richmond	292,146	292,146	285,146	285,146
Total	3,481,872	7,769,972	3,814,194	7,785,694
Portion of City		99.7%		98.6%

The area of the 10.7 mV/m contour within New York City is 290 square miles and that of the 12.7 mV/m contour is 282 square miles, representing 96.7 percent and 94.0 percent, respectively, of New York City's total land area.

Presunrise and Postsunset Service Outside New York City

37. The population within the 10.7 mV/m contour outside New York City that would gain primary service from WNYC's proposed 50 kW presunrise and postsunset operation would total 2,056,187 in an area of

368 square miles. The population within the 12.7 mV/m contour outside the city that would gain primary service from WNYC's proposed 50 kW presunrise and postsunset operation would be 1,680,813 in an area of 288 square miles (WNYC Exhibit 72–111).

38. The population within the New York SMSA but outside the city that would gain primary service from WNYC's proposed 50 kW presunrise and postsunset operation is distributed as follows (WNYC Exhibit 72–111):

	Population	
New York County	*10.7 mV/m Contour*	*12.7 mV/m Contour*
Nassau	138,780	54,863
Westchester	402,332	273,811
Total	541,112	328,674
Percent primary service outside New York City	26.3	19.6

39. The population within the New York–Northeastern New Jersey SCA, but outside the New York SMSA, that would gain service from WNYC's proposed 50 kW presunrise and postsunset operation is distributed as follows (WNYC Exhibit 72–111):

	Population	
New Jersey County	*10.7 mV/m Contour*	*12.7 mV/m Contour*
Bergen	254,984	187,433
Hudson	609,266	609,266
Essex	231,182	191,209
Union	33,796	28,164
Middlesex	18,035	13,212
Total	1,147,263	1,029,284
Percent primary service outside New York City	55.8	61.2

40. The remainder of the population outside New York City that would gain service from WNYC's proposed 50 kW presunrise and postsunset operation is distributed as follows (WNYC Exhibit 72–111):

	Population	
Location	*10.7 mV/m Contour*	*12.7 mV/m Contour*
Stamford, Conn., SMSA	37,706	20,627
Outside any SMSA or SCA (all in Monmouth County)	330,106	302,228
Total	367,812	322,855
Percent primary service outside New York City	17.9	19.2

Availability of Other Primary Services to Presunrise and Postsunset Gain Areas

41. There are at least five primary aural services available to all of the areas within WNYC's present 1 kW SSA and the station's proposed 50 kW nighttime interference-free 10.7 and 12.7 mV/m contours (WNYC Exhibit 72–102, p. 3; WCCO Exhibits 72–19 and 72–20).

Conclusions on Issue 1
Daytime Gain or Loss of Primary Service

42. WNYC's 1 kW, daytime operation presently provides primary service to 11,533,500 persons within the station's 0.5 mV/m contour (interference-free) which encompasses an area of 3,240 square miles. The applicant's proposed 50 kW operation would serve a population of 16,396,300 within an area of 12,500 square miles, or a net gain of 4,862,800 persons and 9,260 square miles of area.

43. *Within New York City:* The 2.0 mV/m contour for both WNYC's present 1 kW and its proposed 50 kW daytime operation encompasses all of New York City. Therefore, there is no gain or loss of primary service within the city.

44. *Outside New York City:* The areas and populations outside New York City that will gain or lose primary service as a result of WNYC's proposed 50 kW daytime operation are: total gain, 5,071,600 population and 9,300 square miles; total loss, 208,800 population and 40 square miles; and net total gain 4,862,800 population and 9,260 square miles.

45. The distribution of the net urban primary service gain and its relation to the total urban gain is as follows:

Classification	*Population*	*Percent of Gain (Urban)*
NY SMSA	1,024,197	25.9
NJ part of NY-NENJ SCA	1,374,729	34.7
Within NY-NENJ SCA	2,398,926	60.6
Philadelphia SMSA	932,570	23.5
Trenton SMSA	298,497	7.5
Stamford SMSA	40,452	1.0
Not within any SMSA or SCA	291,274	7.4
Outside NY-NENJ SCA	1,562,793	39.4

Availability of Other Primary Services to Daytime Gain and Loss Areas

46. With the exception of three New Jersey communities within the gain area, at least five primary aural services are available to all of the

areas that would gain or lose service as a result of WNYC's proposed 50 kW daytime operation. Two of the three New Jersey communities, Beechwood and South Toms River, (combined population 8,371) would receive a fourth primary aural service from WNYC's proposed operation and a fifth service would be provided to the 7,303 persons in the remaining community of Toms River.

47. The overall area and population that would gain as a result of WNYC's proposed 50 kW daytime service is substantial. However, the applicable Northeastern New Jersey SCA gain area and the gain area within the New York SMSA are presently well served with five or more available primary aural services. Moreover, except for a negligible portion, all of the area outside the SCA is equally well served. In addition, the value of WNYC's proposed operation to the area outside the SCA is diluted by the particular geographical location involved. That is, this area is completely outside New York City's dominant community designation area and for the most part is within Philadelphia's dominant community designation area.

Presunrise and Postsunset Gain or Loss of Primary Service

48. The calculated nighttime limitation to WNYC from the existing WCCO operation is to its 10.7 mV/m contour. The proposed WCCO operation would increase the limitation to the 12.7 mV/m contour. The following is a comparison of the presunrise and postsunset predicted coverage of WNYC's present and proposed operation to the present and proposed WCCO nighttime limitation: the 1 kW WNYC operation versus the WCCO proposed operation indicates a loss of 10.14 percent in area and 9.49 percent in population whereas the proposed 50 kW WNYC operation versus the WCCO proposed operation indicates a gain of 359.68 percent in area and 138.36 percent in population.

Presunrise and Postsunset Service Within New York City

49. Both the 10.7 mV/m contours of WNYC's present operation are wholly within New York City. Neither contour extends as far as Staten Island (Borough of Richmond), but each encompasses at least a portion of the other four boroughs of which New York is composed.

50. Both the 10.7 mV/m and the 12.7 mV/m interference-free contours of the present operation lie completely within the corresponding contours of the proposed operation. Therefore, only gain and no loss areas would be involved. With the exception of one relatively small area on the west coast of Staten Island, all of New York City would be within WNYC's proposed 10.7 mV/m contour. With the exception of two relatively small areas, one on the west coast of Staten Island and the other in northeast Queens, all of New York City would be within WNYC's proposed 12.7 mV/m contour. Thus the population would gain 3,481,872 for 99.7 percent of the city in

the 10.7 mV/m contour, and 3,814,194 for 98.6 percent of the city population. The area of the 10.7 mV/m contour within New York City is 290 square miles and that of the 12.7 mV/m contour is 282 square miles, representing 96.7 percent and 94.0 percent, respectively, of New York City's total land area.

Presunrise and Postsunset Service Outside New York City

51. The population within the 10.7 mV/m contour outside New York City that would gain primary service from WNYC's proposed 50 kW presunrise and postsunset operation would total 2,056,187 in an area of 368 square miles. the population within the 12.7 mV/m contour outside the city that would gain primary service from WNYC's proposed 50 kW presunrise and postsunset operation would be 1,680,813 in an area of 282 square miles.

Availability of Other Primary Services to Presunrise and Postsunset Gain Areas

52. At least five primary aural services are available to all of the areas within WNYC's present 1 kW SSA and its proposed 50 kW nighttime interference-free 10.7 and 12.7 mV/m contours.

Issue 2

To determine the areas and populations which may be expected to gain or lose primary or secondary service from the proposed operation of WCCO and the availability of other aural primary (1 mV/m or greater in the case of FM) service to such areas and populations.

Aural Services Licensed Within the Minneapolis-St. Paul SMSA
Aural Services Assigned to Minneapolis-St. Paul

53. Nine standard broadcast stations are assigned to Minneapolis-St. Paul excluding WCCO. Six of these stations, three of which are full time, are licensed to Minneapolis. The three remaining stations, all of which are full time, are licensed to St. Paul. The subject stations range in power and time of operation as follows (WNYC Exhibit 72–53):

Number of Stations	*Power Kilowatts*	*Time of Operation*
2	50	unlimited
2	5	unlimited
1	5	share
1	1	daytime
1	0.5/5–LS	unlimited
1	0.5	daytime
1	0.25/1–63	unlimited

54. In addition to the three full-time standard broadcast stations licensed to Minneapolis and the three licensed to St. Paul, six Class C FM stations, including WCCO-FM stations are licensed to St. Paul (WNYC Exhibit 72–58A). Thus, Minneapolis has nine and St. Paul has six full-time, noneducational aural outlets.

55. Further, two educational FM stations are licensed to Minneapolis (WNYC Exhibit 72–58A).

Aural Services Licensed Outside of Minneapolis-St. Paul but Within the Minneapolis-St. Paul SMSA

56. Nine standard AM broadcast stations are assigned to the subject area. One such station is assigned to each of the counties of Anoka, Washington and Ramsey. Two standard broadcast stations are assigned to Dakota County. Four standard broadcast stations are assigned to Hennepin County, located outside of Minneapolis. Three of the four stations assigned to Hennepin County are full time. The above stations range in power and time of operation as follows (WNYC Exhibit 72–53):

Number of Stations	*Power Kilowatts*	*Time of Operation*
1	5	unlimited
1	5	daytime
1	1	unlimited
3	1	daytime
1	0.5/5	unlimited
1	0.5	daytime
1	0.25	daytime

57. In addition to the three full-time standard broadcast stations, five Class C FM stations are assigned to the subject area. Four of these stations are located in Hennepin County and one is located in Anoka County (WNYC Exhibit 75–58A). Thus, there are eight full-time, noneducational aural outlets assigned within the Minneapolis-St. Paul SMSA but outside of Minneapolis-St. Paul. Including the 15 full-time stations previously noted, 23 full-time noneducational outlets are assigned to the entire Minneapolis-St. Paul SMSA.

58. Field intensity measurements were used to calculate the ground wave contours for both the existing and the proposed WCCO sites (the latter being 14 miles southwest of the existing antenna site) (WCCO Exhibit 72–3S; Broadcast Bureau Exhibit 72–1; Tr. 2339). The present and proposed WCCO radiated fields in the vertical plane were used in conjunction with Section 73.190 of the Commission's Rules to project the secondary service (0.5 mV/m 50 percent sky wave) contours (WCCO Exhibit 72–3S).

59. Populations receiving primary and secondary service from both the

existing and the proposed WCCO operation were determined by using the United States 1970 Bureau of Census figures and County Subdivision maps. Uniform distribution of rural population was assumed within each county subdivision. All of the population within the 2 mV/m ground wave contour was included in the count. Beyond the 2 mV/m ground wave contour, including the 0.5 mV/m sky wave contour, all cities with a population greater than 2,500 were excluded (WCCO Exhibit 72–3).

Daytime and Nighttime Gain or Loss of Primary Service

60. The following is a tabular comparison of the populations and areas within WCCO's present and proposed day and night primary service contours (WCCO Exhibit 72–5S):

Coverage	*Population*	*Area (Sq. Mi.)*
Existing	3,346,057	62,047
Proposed	3,505,785	70,221
Proposed gain	178,200	9,031
Proposed loss	18,472	857
Proposed net gain	159,728	8,174

All of the gain and loss areas are outside the Minneapolis-St. Paul SMSA. The area that would lose service from WCCO's proposed operation is entirely rural (no city over 2,500 population) but the area that would gain primary service includes six cities, not presently served, Pipestone (5,328), Worthington (9,825), Jackson (3,550), Fairmont (10,751), Blue Earth (3,965) and Wells (2,791), a total population of 36,210 (WCCO Exhibit 72–5S).

Availability of Other Primary Service to Daytime Gain or Loss Areas

61. The entire proposed daytime primary service loss area receives five or more other primary aural services and most, if not all of the proposed gain area is equally well served (WCCO Exhibit 72–5S).

Availability of Other Primary Service to Nighttime Gain or Loss Areas

62. The greater part of the area that would lose primary nighttime service as a result of WCCO's proposed operation is presently underserved. A population of 434 within an area of 235 square miles would lose its only primary aural service and another 1,431 persons within an area of 311 square miles would receive only one service. Except for a relatively small area that would receive six primary aural services, the remaining area would receive two, three or four such services (WCCO Exhibit 72–5S).

63. WCCO's proposed operation would provide a first primary aural service to a population of 1,374 within an area of 343 square miles and a second service to 15,500 persons within an area of 1,339 square miles. Although there are areas presently receiving five or more services, the greater part of the remaining area is less well served and the proposed operation would provide portions thereof with a third, fourth or fifth primary aural service (WCCO Exhibit 72–5S). The proposed primary service gain area lies between the present 0.5 mV/m ground wave contour and the present 0.5 mV/m 50 percent sky wave contour. Consequently, it is a part of the present secondary service area. However, since it is the proposed primary service gain area, it becomes, at the same time, the proposed secondary service loss area. Despite its description as a loss, therefore, it represents an improvement and not a degradation of service. Conversely, the proposed primary service loss area of 18,472 persons within 857 square miles is a portion of the proposed secondary gain area. It is small by comparison with the total of that gain area, but it represents a degradation of service to that small area.

Nighttime Gain or Loss of Secondary Service

64. The following is a tabular comparison of the populations and areas within WCCO's present and proposed secondary service (night-time sky wave) contours (WCCO Exhibit 72–5S):

Coverage	*Population*	*Area (Sq. Mi.)*
Existing	21,589,889	1,005,656
Proposed	26,172,555	1,185,192
Proposed gain	4,702,098	188,566
Proposed loss	178,200	9,031
Proposed net gain	4,523,898	179,535

A portion of this loss area becomes, in fact, part of the primary service area and represents improvement rather than degradation.

Availability of Other Primary Service to Nighttime Secondary Service Gain or Loss Area

65. The primary aural services available to WCCO's proposed secondary service gain areas, excluding those involved in primary service gain or loss, are tabulated below (WCCO Exhibit 72–5S):

Available Primary Service	*Population*	*Area (Sq. Mi.)*
0	229,264 (4.9%)	61,801 (32.9%)
1	594,218 (12.7%)	47,509 (25.3%)
2 or more	3,860,144 (82.4%)	78,399 (41.8%)
Total	4,683,626 (100.0%)	187,709 (100.0%)

The greater part of WCCO's proposed secondary service gain area to the west and southwest of Minneapolis (areas in Montana, Wyoming, Colorado, Texas and Oklahoma) represents "white" (no available primary aural service) area, which is predominantly rural (WCCO Exhibit 72–5S). In addition, very little of such area receives more than two primary aural services. Further, the majority of all of the "white" and "gray" (one available primary aural service) areas within WCCO's proposed secondary service gain area is located in the above referenced west and southwest areas (WCCO Exhibit 72–5S).

66. In contrast, the remaining proposed secondary service gain area has a decreasing number of "white" and "gray" areas and becomes increasingly urbanized and better served as it sweeps eastward, northeastward and north through Arkansas, Mississippi, Alabama, Tennessee, Kentucky, West Virginia, Pennsylvania and New York (WCCO Exhibit 72–5S).

Conclusions on Issue 2
Daytime and Nighttime Gain or Loss of Primary Service

67. WCCO's present operation provides day and nighttime primary service to 3,346,057 persons within the station's 0.5 mV/m contour (interference-free) which encompasses an area of 62,047 square miles. Applicant's proposed operation would serve a population of 3,505,785 within an area of 70,221 square miles.

68. The areas and populations that would gain or lose primary service as a result of WCCO's proposed operation represent a net gain of 13.17 percent and 4.77 percent, respectively. All of the gain or loss areas are outside the Minneapolis-St. Paul SMSA and almost wholly outside of Minnesota. The area that would lose service from WCCO's proposed operation is entirely rural, but the area that would gain primary service includes six cities not presently served, representing a total population of 36,210.

Availability of Other Primary Service to Daytime Gain or Loss Areas

69. The proposed daytime loss area receives five or more other primary aural services and most, if not all, of the proposed daytime gain area is equally well served.

Availability of Other Primary Service to
Nighttime Gain or Loss Areas

70. The greater part of the area that would lose primary nighttime service as a result of WCCO's proposed operation is already underserved. A population of 434 (or 2.35 percent of the total area) within an area of 235 square miles (27.4 percent) would lose its only primary aural service and another 1,431 persons (7.75 percent) within an area of 311 square miles

(33.3 percent) would be reduced to one service. Except for a relatively small area that would receive six, the remaining area would receive two, three or four primary aural services.

71. As with the loss area, most of the nighttime gain area is presently underserved. WCCO's proposed operation would provide a first primary aural service to a population of 1,374 (0.77 percent) within an area of 343 square miles (3.80 percent) and a second service to 15,500 persons (8.73 percent) within an area of 1,339 square miles (14.83 percent). Although there are areas presently receiving five or more services, the greater part of the remaining area is less well served and WCCO's proposed operation would provide portions thereof with a third, fourth or fifth primary aural service.

Nighttime Gain or Loss of Secondary Service

72. WCCO's present operation provides secondary service to 21,589,889 persons within the station's 0.5 mV/m 50 percent sky wave contour which encompasses an area of 1,005,656 square miles. Its proposed operation would provide a secondary service to a population of 26,113,787 within an area of 1,185,191 square miles.

73. As a result of WCCO's proposed operation there would be a net gain in secondary service of 20.95 percent in population served and 17.85 percent in increased area.

Availability of Other Primary Service to Nighttime Secondary Service Gain or Loss Area

74. The primary aural services available to WCCO's proposed secondary service gain areas, excluding those involved in primary service gain or loss represent a gain of primary service where none is now available of 32.9 percent in area and 4.9 percent in population. Similarly, where one service is now available, the gain will be 25.3 percent in area and 12.7 percent in population. Where two or more services are now available the gain is 41.8 percent in area and 82.4 percent in population. All of the loss area, however, represents a shift from primary to secondary and the gain area, a shift from secondary to primary.

75. Thus, a large part of WCCO's secondary service gain area to the west and southwest of Minneapolis (areas in Montana, Wyoming, Colorado, Texas and Oklahoma) represent "white" areas, which are predominantly rural and very little of that area receives more than two primary aural services.

76. The extended secondary service which WCCO provides comports with the type of secondary service expected to be provided by a Class I station [see Section 73.21(a)(1) of the Rules]. Significantly, actual secondary service will be provided to a considerable portion of the subject area

due to the rural nature of the secondary service gain area to the south and southwest (i.e., not having communities in excess of 2,500 population).

Issue 3

To determine whether the proposals of the City of New York Municipal Broadcasting System would (a) cause objectionable interference to station WCCO, or any other existing standard broadcast station, and, if so, the nature and extent thereof, the areas and populations affected thereby, (b) and the availability of other primary and secondary service to such areas and populations, and (c) the nature and character of program service now being rendered by station WCCO to such areas and populations. (Subdesignations supplied.)

(a) Interference

77. Field intensity measurements were used to calculate the ground wave contours for WCCO's existing and proposed operations (WNYC Exhibit 72–112; Tr. 2678). Ground wave service contours for other standard broadcast stations considered herein were based on the ". . . notified radiations for non-directional operations and the latest authorized radiation patterns for directional operations." In addition, the ground wave service contours of these other existing standard broadcast stations were based on FCC Figure M3 conductivities which did not vary substantially from measurements from proof of performance data (WNYC Exhibit 72–101, p. 4). The location of the interference areas produced by existing station WHAS, Louisville, Kentucky, 840 kHz, was obtained from information in WCCO's application (BP–19151) (WNYC Exhibit 72–103).

78. Sky wave contours and sky wave objectionable interference areas were determined in accordance with Section 73.182 of the Rules, using the appropriate curves of Figures 1a and 6a of Section 73.190 of the Rules (WNYC Exhibit 72–101). The vertical radiation pattern relied upon for the prediction of the locations of the present WCCO contours was computed from data contained in WCCO's amended application (BP–19151). The vertical radiation pattern used to predict the proposed WCCO contours was that which appears in WCCO's amended application (BP–19151, Figure 4, Exhibit E–1) (WNYC Exhibit 72–101; Tr. 2308). The 0.5 mV/m 50 percent sky wave (secondary service) contours for other existing Class I stations considered herein were based on the ". . . notified radiations for non-directional operations and on the latest authorized radiation patterns for directional operations." The 10 percent sky wave (interference) contours for WNYC's present 1 kW SSA operation were determined from information in WNYC's outstanding authorization (B1–SSA–52) and from its calculated nighttime directional pattern (WNYC Exhibit 72–101). The 10 percent sky wave (interference) contours

for WNYC's proposed 50 kW nighttime operation were based on the MEOV's of its calculated radiation patterns (WNYC Exhibit 72–101).

79. All of the FM 1 mV/m contours shown in the WNYC Exhibits were determined in accordance with the prediction of coverage of Section 73.313 of the Rules with the use of the F (50,50) field strength chart, Figure 1 of Section 73.333. The 1 mV/m FM contour for the existing WNYC-FM operation was determined from the effective radiated power and antenna heights above average terrain (HAAT) for that station on file with the Commission. The 1 mV/m contours of other existing FM stations were based on the licensed values of height and power for each FM station assuming uniform terrain; but no significant difference would have resulted from the actual HAAT if the eight standard directions had been used (WNYC Exhibit 72–101).

80. All population data were based on 1970 U.S. Census figures. The pertinent minor civil division maps, census tract maps and urbanized area maps were used to count the population within primary service areas. In making population analyses, communities of over 2,500 population and portions of urbanized areas not receiving a signal (AM) of 2 mV/m, or better, were excluded from the count. The rural populations within the secondary service areas of WCCO's present and proposed operations that are affected by interference from WNYC were based on a count by county division assuming uniform distribution of rural population within the counties. The land areas were determined by measuring the pertinent map areas with a planimeter, excluding large water areas, and then converting the map areas into land areas in square miles by a multiplying factor based on the scale of the map (WNYC Exhibit 72–101).

Primary Service Interference

81. Neither WNYC's present 1 kW SSA nor its proposed 50 kW nighttime operation will cause objectionable interference to the primary service (0.5 mV/m ground wave) contour of the present or proposed operation of WCCO, nor to that of any other existing or proposed standard broadcast operation (WNYC Exhibits 72–103 and 72–112; Tr. 2327 and 2329).

Secondary Service Interference

82. As presently operating, WCCO receives objectionable interference within its secondary service (0.5 mV/m, 50 percent sky wave) contour from WNYC's 1 kW SSA operation to a total of 7,905,300 persons within an area of 149,600 square miles. WNYC's proposed 50 kW nighttime operation would reduce that objectionable interference to a total of 7,158,600 persons within an area of 125,800 square miles, excluding 547,300 persons within 12,900 square miles which receive objectionable

interference from presently authorized operation of WHAS, which is wholly within the WNYC interference area (WNYC Exhibit 72–103). The objectionable interference area for WNYC's 1 kW SSA and its proposed 50 kW nighttime operations include portions of Michigan, New York, Pennsylvania, Ohio, West Virginia, Kentucky, Tennesse and a *de minimis* penetration of Mississippi. At its nearest point, the objectionable interference area is approximately 385 miles from Minneapolis insofar as WNYC's 1 kW SSA operation is concerned and approximately 420 miles from Minneapolis insofar as the applicant's proposed 50 kW nighttime operation is concerned (WNYC Exhibits 72–103 and 72–112). WCCO also receives objectionable interference within its secondary service contour from Class I station WHAS (WNYC Exhibits 72–103 and 72–112).

83. WCCO's proposed operation would receive objectionable interference within its secondary service (0.5 mV/m, 50 percent sky wave) contour from WNYC's present 1 kW SSA and its proposed 50 kW nighttime operation. In each instance there would be two areas that would receive objectionable interference, i.e., a large area at the outer rim and a much smaller area at the inner rim of WCCO's proposed secondary service contour (WNYC Exhibits 72–103 and 72–112). The total areas and populations so affected would be 10,822,400 persons within a combined area of 211,200 square miles for the 1 kW SSA operation and 9,983,600 persons within a combined area of 185,600 square miles for the proposed 50 kW nighttime operation not taking into account the interference caused by WHAS (WNYC Exhibit 72–103). At its outer limit, the objectionable interference area includes portions of Michigan, New York, Pennsylvania, West Virginia, Kentucky, Tennessee, North Carolina, Alabama and Mississippi. At its nearest point, this objectionable interference area is about 385 miles from Minneapolis with respect to WNYC's 1 kW SSA operation and would be about 415 miles from Minneapolis with respect to WNYC's proposed 50 kW nighttime operation. At its outer extremity, the objectionable interference area is about 700 miles from Minneapolis for either the present or the proposed WNYC operation. At its inner limit the objectionable interference area is in the form of a crescent located in Wisconsin and the upper peninsula of Michigan, with a slight penetration into Iowa. In terms of WNYC's proposed 50 kW nighttime operation, the inner objectionable interference area would be confined to Wisconsin. At its center, the near edge of the objectionable interference crescent is at a distance of about 200 miles from Minneapolis insofar as WNYC's 1 kW SSA operation is concerned and would be about 220 miles from Minneapolis insofar as WNYC's proposed 50 kW nighttime operation is concerned. At its center, the far edge of the crescent of objectionable interference would be about 240 miles from Minneapolis for either operation (WNYC Exhibit 72–112).

(b) Available Service

Availability of Primary Service to the Secondary Service Loss Area

84. As presently operating, there are both "white" (no available primary aural services) and "gray" (one available primary aural service) areas as well as areas with two or more available primary aural services within WCCO's secondary service area that presently receive objectionable interference from WNYC's 1 kW SSA operation. Similarly, there are "white," "gray" and better served areas within WCCO's secondary service area that would receive objectionable interference from WNYC's proposed 50 kW nighttime operation (WNYC Exhibit 72–103). The primary aural services available to the areas and populations within WCCO's present secondary service area (but not including the WHAS interference area) that receives objectionable interference from WNYC's present operation or that would receive such interference from WNYC's proposed operation are tabulated below (WNYC Exhibit 72–103):

Available Primary Aural Service	*1 kW SSA*		*50 kW Nighttime*	
	Sq. Mi.	*Population*	*Sq. Mi.*	*Population*
0	5,200	76,300	1,800	51,000
1	11,100	244,300	8,300	195,100
2 or more	133,300	7,584,700	115,700	6,912,500

85. As proposed, there would be both "white" and "gray" areas as well as areas with two or more available primary aural services within WCCO's secondary service area that would receive objectionable interference from WNYC's 1 kW SSA operation. Similarly, there would be "white," "gray" and better served areas within WCCO's proposed secondary service area that would receive objectionable interference from WNYC's proposed 50 kW nighttime operation (WNYC Exhibit 72–103). Primary aural services available to the areas and populations within WCCO's proposed secondary service area that would receive objectionable interference from WNYC's present and proposed operations are tabulated below (WNYC Exhibit 72–103):

Available Primary Aural Service	*1 kW SSA*		*50 kW Nighttime*	
	Sq. Mi.	*Population*	*Sq. Mi.*	*Population*
0	10,200	189,200	5,600	154,599
1	22,800	688,900	18,700	586,400
2 or more	178,200	9,944,300	161,300	9,242,700

Availability of Secondary Service to the Secondary Service Loss Areas

86. There are in excess of ten other available secondary services for any part of WCCO's present or proposed secondary service area which will receive objectionable interference from either WNYC's 1 kW SSA or its proposed 50 kW nighttime operation (WNYC Exhibit 72–103).

(c) Program Service

The nature and Character of Program Service now Being Rendered by Station WCCO to such Areas and Populations

87. Station WCCO operates 24 hours a day. All of WCCO's programming, except programs originated by CBS with which WCCO is affiliated, is produced locally (Tr. 3264).

88. Programs broadcast by WCCO during WNYC's SSA hours of operation for the calendar years 1970 through 1972 are discussed below. WNYC's SSA hours of operation (in Minneapolis times) are as follows (WCCO Exhibit 72–17):

Month	*SSA Hours*	*Number of Hours*
January	5:00 AM– 6:15 AM (CST)	1¼
	5:00 PM– 9:00 PM (CST)	4
February	5:00 AM– 5:45 AM (CST)	¾
	5:45 PM–9:00 PM (CST)	3¼
March	5:00 AM– 5:15 AM (CST)	¼
	6:15 PM– 9:00 PM (CST)	2¾
April	7:00 PM– 9:00 PM (CST)	2
May	8:30 PM–10:00 PM (CDT)	1½
June	9:00 PM–10:00 PM (CDT)	1
July	9:00 PM–10:00 PM (CDT)	1
August	8:15 PM–10:00 PM (CDT)	1¾
September	7:30 PM–10:00 PM (CDT)	2½
October	6:30 P.M–10:00 PM (CDT)	3½
November	5:00 AM– 5:45 AM (CST)	¾
	4:45 PM– 9:00 PM (CST)	4¼
December	5:00 AM– 6:15 AM (CST)	1¼
	4:30 PM– 9:00 PM (CST)	4½

89. WCCO's entertainment program format during evening SSA hours

is ". . .primarily middle-of-the-road music . . ." (WCCO Exhibit 72–17, Part II; Tr. 3281–3283). Its early morning programming during SSA hours is not shown.

90. In excess of 85 percent of WCCO's locally-produced news programs broadcast during 1970, 1971 and 1972 SSA hours are designed to deal with material of interest to WCCO "Radio listeners" beyond the "local" (seven county Minneapolis-St. Paul metropolitan area) and "regional" (Minnesota and all or portions of adjacent states) service areas of the station (WCCO Exhibits 72–16 and 72–17). Approximately 6.4 percent and 9.4 percent of the news programs broadcast during SSA hours in 1970 and 1972, respectively, consisted of weather information. Similar information as to 1971 was not provided. The purpose of the weather broadcasts is to provide a full area-wide weather picture with particular emphasis on the impact weather conditions have on the farmer, rancher and livestock producer, as well as the traveler, and the trucking and aviation industry. Approximately half of the news programs broadcast during the early morning SSA hours are devoted to weather with a format tailored especially to rural needs (WCCO Exhibit 72–17, Part II).

91. The "bulk" of the locally-produced sports programs broadcast during SSA hours comprise play-by-play accounts of major league professional sports (WCCO Exhibit 72–17, Part II).

92. Descriptions for regular WCCO programs broadcast during SSA hours are as follows (WCCO Exhibit 72–17, Part III):

SUNDAYS

5:05–5:30 a.m.—SUN. MORNING IN 'CCO-LAND
5:45–6:00 a.m.—SUN. MORNING IN 'CCO-LAND

Overall title of basic participation program. Includes recorded music; flow of informatiion of general interest; results and news of major league, college, Big Ten and other sports events of national interest; nationwide weather summary, including temperatures in major U.S. cities; highway information; news of local, regional and national interest.

5:30–5:45 a.m.—MOMENTS WITH THE SACRED HEART

A weekly religious program. The series presents inspirational messages by theologicans of national stature and music by Cathedral and parochial school choirs from across the nation.

6:05–7:00 a.m.—PRELUDE TO PRAYER

Variety of recorded religious music from all faiths. Mu-

sic is interspersed with public service announcements, weather data, service information and news of local, regional and national interest.

5:00–9:00 p.m.—SUNDAY IN 'CCO-LAND

Flow of music with information from diverse sources; news wires, telephone correspondents coast-to-coast, special guests, public safety services, National Weather Service in order to provide programming of broad-gauged interest to listeners in the Clear Channel coverage area.

5:10–5:25 p.m.—HOT STOVE LEAGUE

During late winter and early spring, baseball news from Florida's major league spring training camps. Play-by-play broadcasters Herb Carneal and veteran sportscaster Halsey Hall interview players, managers, coaches from American and National League baseball clubs concerning trades, disputes with players, and other behind-the-scene activities involved in preparations for the upcoming baseball season.

MONDAYS THROUGH SATURDAYS (SSA)

5:10–6:55 a.m.—TOP O' THE MORNING/SUNRISERS

Variety program anchored by farm and news-oriented personality, Rog Erickson, (or Chuck Lilligren) with WCCO Radio's Farm Service Director Maynard Speece and Associate Farm Service Director Chuck Lilligren. The format provides immediate information based on direct reports from stringers as to snow conditions and highway information and, on week-days of school closings. Also, information is disseminated of regional and national interest, including a countrywide weather roundup, temperatures from major U.S. cities, interviews with authorities on various subjects, agricultural news from the nation's capital, results of major sporting events.

5:20–5:25 a.m.—HOLY BIBLE (Mondays through Fridays)

Daily reading aof a text from the Holy Bible by a member of the clergy.

5:50–5:55 a.m.—DAILY FARM BULLETIN BOARD

Daily program with WCCO Farm Service Director Maynard Speece. News and listing of important events, meetings, schools, workshops, conferences of farm and agri-business organizations.

MONDAYS THROUGH FRIDAYS

5:20–5:25 p.m.—SPORTS NEWS

News from the world of sports prepared and presented by WCCO Radio Sportscaster Ray Christensen. Includes coverage of top national and regional sporting events, such as golf tournaments, major league baseball, Big Ten college sports, auto racing and college sports news.

5:25–5:30 p.m.—POINT OF LAW

Dramatization of a court case of general interest and area-wide utility, including explanation of the court's decision. This is one of the longest continuously scheduled programs on WCCO Radio, produced in cooperation with bar groups as an aid to the listener, particularly the consumer, housewife, and farmer who does not have a lawyer on call in order to alert the public to legal pitfalls and legal rights and the importance of consulting professionals where appropriate to protect such rights.

5:30–5:35 p.m.—BUSINESS NEWS AND MARKETS

News of business organization and industries, improvements and expansions; wrap-up of day's business activities; reports on stock markets including regional as well as national exchanges by member of Piper, Jaffrey and Hopwood, a Minneapolis firm in the securities business.

MONDAYS THROUGH FRIDAYS

5:35–7:00 p.m.—AFTERNOON: STEVEN CANNON

Participation program anchored by personality Steven Cannon. As with many of WCCO Radio's basic programs, the format is flexible to allow immediate array of important information, warnings, emergency instruc-

tions, etc. Regularly includes music, national and regional weather reports, road and traffic conditions; direct telephone communication with AAA correspondents, news stringers, sports reporters for current and on-location reports.

6:06–6:10 p.m.—WCCO SPORTS

Update of sports news, scores, etc.

6:10–6:15 p.m.—TODAY'S SPORTS HERO

Sports Editor of Minneapolis Tribune, Sid Hartman, interviews outstanding national sports figure who contributed to his team's winning a major sporting event. Editor Hartman seeks out the top newsmaker from anywhere in the country whether his game is Big 10 or pro basketball, golf, baseball or auto racing.

6:45–6:50 p.m.—SNOWMOBILE REPORT (alternating with *Boat Show* in spring and summer)

News and reports on snowmobile races, trails and activities; rules and regulations; safety precautions; interviews with authorities on snowmobiling. Of interest to snowmobilers and outdoorsmen on an areawide basis.

7:10–9:00 p.m.—'CCO ON THE GO

Cover title for basic variety-participation program anchored by Steven Estrom, 7–8 p.m. Ray Christensen joins as co-host, 8–9 p.m. Via telephone and other broadcast facilities, program hosts put listeners in touch with people and places in the news from coast-to-coast, experts in various fields of endeavor and participants in human interest stories. Blended together with music from contemporary to classics.

SATURDAYS

5:10–9:00 p.m.—SATURDAY IN 'CCO-LAND

Covering title for basic participation program. WCCO Radio's general policy of "flexibility" is utilized by on-air personnel to provide entertainment, music, information and services of interest and importance to listeners throughout the entire coverage area.

93. During SSA hours of the 1970 composite week, WCCO broadcasts programs as follows (WCCO Exhibit 72–17, Appendix 2):

All Programming

Program Type	*Hr:Min:Sec*	*Percent*
Agriculture	1:00:45	5.7
Entertainment	6:27:10	36.6
News	4:06:25	23.3
Public Affairs	1:13:25	6.9
Religion	14:50	1.4
Sports	4:09:10	23.5
All Other	27:20	2.6
Total	17:39:05	100.0

94. WCCO's news and sports broadcasts during the 1970 composite week are further broken down as follows (WCCO Exhibit 72–17, Appendix 2):

News
(Total: 4:06:25 = 100%)

CBS Produced	*Locally Produced*	
Newscasts	*Newscasts*	*Weather*
1:57:45	1:44:50	23:50
47.8%	42.5%	9.7%

Sports
(Total: 4:09:10 = 100%)

CBS Produced	*Locally Produced*	
Sports News	*Play-by-Play*	*Sports News*
34:20	2:15:45	1:18:45
13.8%	54.5%	31.7

95. Programs selected by WCCO as "special interest" CBS programs broadcast during 1970 SSA hours are as follows (WCCO Exhibit 72–17, Appendix 2). The term "special interest" is not defined on record nor is there indication these are representative.

Public Affairs

Date	*Time*	*Programs*
January 2	8:05–8:50 p.m.	The Correspondent's Report: End of a Decade
January 25	8:30–9:30 p.m. (SSA ended 9 p.m.)	Face The Nation
January 26	8:00–8:17 p.m.	President Nixon Veto Address

February 9	8:00–8:45 p.m.	Conversation with Lyndon Johnson
February 27	8:05–9:00 p.m.	Classroom USA: The Draft
April 20	8:00–8:24 p.m.	President Nixon
April 21	8:05–8:30 p.m.	Spaceship Earth
May 3	9:05–9:30 p.m.	Face The Nation
May 4	8:00–8:45 p.m.	Lyndon Johnson LBJ: Tragedy and Transition
July 26	9:05–9:30 p.m.	Face The Nation
August 10	8:05–8:40 p.m.	State of the Judiciary
September 7	9:05–9:30 p.m.	Face The Nation
September 28	9:00–9:30 p.m.	President Nassar Special
October 7	8:00–8:30 p.m.	President Nixon
December 10	6:00–6:35 p.m.	President Nixon's News Conference

96. Programs selected by WCCO as "special interest" locally-produced programs broadcast during 1970 SSA hours are as follows (WCCO Exhibit 72–17, Part I and Appendix 2). The term "special interest" is not defined nor is there indication whether considered "local" or "regional" in appeal.

Agriculture

Date	*Time*	*Programs*
January 6	8:00–8:54 p.m.	Year-End Agriculture Roundup
January 19	8:05–8:20 p.m.	University of Minnesota Concerts and Lectures
August 27	8:05–8:30 p.m.	Corn Blight—A Report

News Special

November 3	7:30 p.m.–2:00 a.m. (SSA ended 9 p.m.)	Election News Special

Public Affairs

January 21	8:05–9:00 p.m.	Conversation with Two Rookie Cops
January 30	8:05–9:00 p.m.	WCCO Special: News Conference Review and Open Mike
February 2	8:30–9:00 p.m.	The Pill
February 9	8:45–9:30 p.m.	WCCO Analysis: Dan Rather: Review

February 10	8:05–9:00 p.m.	Ask WCCO Radio About: Precinct Caucuses
February 11	8:05–8:20 p.m.	House by the Side of the Road
February 16	8:05–9:00 p.m.	Open Dorms
February 17	8:05–9:00 p.m.	Farmers and Food Prices
February 18	7:00–7:15 p.m.	Metropolitan Opera
February 23	8:05–9:00 p.m.	Teacher Salary Negotiations
February 25	6:30–6:45 p.m.	Copland and His Music
March 2	7:15–8:45 p.m.	WCCO Congressional Survey
March 10	8:05–9:00 p.m.	Ask 'CCO Radio About: Income Taxes
March 16	8:05–9:00 p.m.	Ask WCCO About: The Welfare Mess
March 26	8:05–9:00 p.m.	Ask WCCO Radio About: The Census
March 30	8:05–9:00 p.m.	Ask WCCO About: No-Fault Auto Insurance
April 1	8:05–9:00 p.m.	WCCO Open Mike: Metro Airports
April 3	8:05–8:15 p.m.	American Week
April 6	8:05–9:00 p.m.	WCCO Open Mike: New Directions on Abortion Laws
April 15	8:05–9:00 p.m.	Ask 'CCO Radio About: Student Government
April 17	8:05–9:00 p.m.	Indian Education: What Can the Private Sector Do?
April 20	8:25–9:30 p.m. (SSA ended 9 p.m.)	WCCO Open Mike: A Look at the American System of Justice
April 22	8:05–9:00 p.m.	WCCO Open Mike: Students for Environmental Defense
April 23	8:05–9:00 p.m.	WCCO Open Mike: Pollution and Nuclear Power Plants
May 4	8:45–9:30 p.m.	WCCO Open Mike: Dan Rather: Review
May 21	8:05–9:00 p.m.	WCCO Open Mike: Voyageurs National Park
July 2	9:00–9:30 p.m.	WCCO Open Mike: President Nixon
September 30	8:05–9:00 p.m.	WCCO Open Mike: The Unmarried Father
October 5	8:05–8:30 p.m.	Campus Comments: Are Students Taking Over the Colleges?

October 12	8:05–8:15 p.m.	Campus Comments: Increasing Costs of College Education
October 19	8:05–8:15 p.m.	Campus Comments: Limitation of Campus Enrollment
October 19	8:30–9:00 p.m.	Political Participation: The Real Majority
October 20	8:05–9:00 p.m.	WCCO Open Mike: United Nations
October 22	9:00–9:05 p.m.	George Meany Addresses
October 26	8:05–8:15 p.m.	Campus Comments: Students' Hopes, Fears, Hang-ups, and Accomplishments
October 26	8:15–9:30 p.m.	Ask 'CCO Radio About: Public Transportation
October 27	8:05–9:00 p.m.	Ask WCCO Radio About: Property Taxes: Amendment No. 1
October 29	8:30–9:00 p.m.	Ask WCCO Radio About: Young Voters: Amendment No. 2
October 29	9:00–9:05 p.m.	George Meany Addresses
November 1	4:45–4:55 p.m.	Election Machinery 1970
November 9	8:05–8:15 p.m.	Campus Comments: Rural Health Physicians Associate Program
November 12	8:05–9:00 p.m.	WCCO Open Mike: The Deer Season—Cash or Conservation
November 19	8:30–9:05 p.m. (SSA ended 9 p.m.)	WCCO College Bandstand
November 24	8:05–9:00 p.m.	WCCO Open Mike: The Israeli View
November 30	8:05–8:15 p.m.	Campus Comments: Academic Responsibility
December 7	8:05–8:15 p.m.	WCCO Campus Comments
December 14	8:05–8:15 p.m.	WCCO Campus Comments: Radicals on Campus

Religious

May 28	9:10–9:25 p.m.	Religion and the Athlete
September 28	8:05–9:00 p.m.	Ask 'CCO Radio About: Jewish High Holy Days
December 24	7:15–7:20 p.m.	On-The-Go

Sports and Recreation

January 9	8:05–9:00 p.m.	Super Bowl
February 7	6:40–6:45 p.m.	Snowmobile Races
February 8	8:40–8:45 p.m.	Snowmobile Races
November 8	4:45–4:50 p.m.	National Handball Championships

Instructional

January 30	6:00–6:30 p.m.	Winter Problems: Snow and Ice on Roofs
August 17	8:15–8:30 p.m.	Summer Safety: Water Safety
September 13	9:00–9:30 p.m.	Beyond the Frontier
October 8	8:45–8:55 p.m.	Music for the Chamber Orchestra
October 19	9:10–9:22 p.m.	WCCO Land in Frontier Days
November 20	8:15–10:15 p.m. (SSA ended 9 p.m.)	Minnesota Orchestra
December 11	8:15–10:15 p.m. (SSA ended 9 p.m.)	Minnesota Orchestra Concert
December 24	8:05–9:00 p.m.	On-The-Go—Mr. Dickens' Christmas

Other

April 6	8:05–8:20 p.m.	Specialized Libraries Possibility of Inter-library Cooperation
April 28	8:05–8:15 p.m.	Glaucoma Clinic
December 3	8:40–8:50 p.m.	On-The-Go—Help Mentally Ill
December 4	8:25–8:30 p.m.	On-The-Go—Family Recreation
December 7	8:15–9:00 p.m.	Ask 'CCO About: Alcoholism
December 13	4:30–5:50 p.m.	Sunday Special—Christmas Music

97. Programs selected by WCCO as "special interest" CBS programs broadcast during 1971 SSA hours are as follows (WCCO Exhibit 72–17, Appendix 3). WCCO's 1970 composite week SSA hour programming breakdown of News and Sports is said to be "representative" of the applicant's "1971 operation" (WCCO Exhibit 72–17, Part II).

News

Date	*Time*	*Programs*
January 31	6:35–6:45 p.m.	Apollo 14
February 1	6:35–6:45 p.m.	
February 2	6:35–6:45 p.m.	

News

Date	*Time*	*Programs*
February 3	6:35–6:45 p.m.	
February 4	5:30–6:00 p.m.	(Descent Insertion)
	6:35–6:45 p.m.	
February 5	6:35–6:45 p.m.	
February 6	5:01–5:02 a.m.	
	5:30–5:35 a.m.	
	6:35–6:45 p.m.	
February 7	6:35–6:45 p.m.	
February 8	6:35–6:45 p.m.	
	8:05–8:30 p.m.	Space to Earth News Conference Apollo Crew answered questions submitted by newsmen to NASA
July 16	9:20–9:30 p.m.	CBS News Special on China

Public Affairs

Date	*Time*	*Programs*
January 4	8:00–9:00 p.m.	A Conversation with the President
January 15	8:15–8:30 p.m.	Interview with Israel's Premier Golda Meir
January 18	7:30–7:45 p.m.	Announcement by Senator George McGovern of South Dakota of his candidacy for the Presidency
January 22	8:00–8:38 p.m.	President Nixon: State of Union Address
March 4	8:00–8:30 p.m.	President Nixon News Conference
April 7	8:00–8:22 p.m.	President Nixon Address
April 16	8:00–9:00 p.m.	President Nixon Roundtable Discussion
April 21	8:30–9:00 p.m.	Earth Day Revisited: The Balance Sheet
August 15	8:00–8:30 p.m. (SSA began at 8:15 p.m.)	President Nixon's Address to the Nation
October 21	6:30–6:50 p.m.	President Nixon: Statement on Supreme Court Nominees
October 24	6:30–6:40 p.m.	President Nixon: Veterans' Day Address
December 27	8:05–9:00 p.m.	CBS News Correspondents Report (Part I): The Nation

December 31	8:05–9:00 p.m.	CBS News Correspondents Report (Part II): America and the World

Other

Date	*Time*	*Programs*
September 10	8:30–8:35 p.m.	President Nixon: United Fund Message
September 23	8:00–9:00 p.m.	President Nixon's Appearance Before the Detroit Economic Club

98. Programs selected by WCCO as "special interest" locally-produced programs broadcast during 1971 SSA hours are as follows (WCCO Exhibit 72–17, Part I, Appendix 3):

Agriculture

Date	*Time*	*Programs*
January 12	6:06–6:25 a.m.	". . . problems involved in getting *meat from the range to the tables* of the nation's consumers . . . national meat price rises."
February 4	8:30–9:00 p.m.	How to work, play and enjoy the northern snow country outdoors in winter.
February 8	5:35 a.m. (ending not shown)	". . . regulations on pesticides. . . ."
February 9	8:05–8:30 p.m.	Discussion about Jerusalem
February 16	5:35 a.m. (ending not shown)	". . . sewage standards for resorts and cabins. . . ."
February 26	8:15–10:50 p.m. (SSA ended 9 p.m.)	Minnesota Orchestra Concert
October 18	6:30–6:45 p.m.	Farm Subsidy Report
November 22	6:05–6:55 a.m.	Farm-City Day
November 23	8:05–9:00 p.m.	Farm-City Day

Public Affairs

Date	*Time*	*Programs*
January 7	7:32–7:42 p.m.	Abuses of Food Stamp Program
January 11	8:05–9:00 p.m.	Ask 'CCO Radio About: The Need of Guidelines for Community Schools

January 13	8:05–9:00 p.m.	Open Mike: Predator Control: Should Wolves Be Protected from Hunters and Trappers?
February 15	8:00–9:00 p.m.	Clear Channel Governor's Open Mike
February 19	(time not shown)	Open Mike—Funding a County General Hospital
February 22	8:00–9:30 p.m. (SSA ended 9 p.m.)	Abortion Reform
March 1	8:00–9:30 p.m. (SSA ended 9 p.m.)	Abortion Law Reform
March 1	9:00–9:30 p.m.	WCCO Open Mike
March 4	8:30–9:00 p.m.	WCCO Open Mike
March 8	8:06–9:00 p.m.	Ask 'CCO Radio: About Income Taxes
March 11	8:35–8:50 p.m.	Cross Section
March 15	8:05–9:00 p.m.	Clear Channel Governor's Open Mike
March 16	8:05–9:00 p.m.	Open Mike: Housing Crises
March 31	8:05–9:00 p.m.	Open Mike: Politics of Prison
April 1	8:00–9:30 p.m. (SSA ended 9 p.m.)	Legislative Hearing: Property Taxes
April 5	8:00–9:30 p.m. (SSA ended 9 p.m.)	Legislative Hearing: Studded Snow Tires
April 6	8:05 9:00 p.m.	Open Mike: State Aid for Non-Public Schools
April 14	7:30–8:00 p.m.	Clear Channel Governor's Open Mike
	8:00–9:30 p.m. (SSA ended 9 p.m.)	Legislative Hearing: Pari-Mutual Betting
April 19	8:05–9:00 p.m.	Open Mike: Property Taxes
May 3	8:00–9:30 p.m. (SSA began at 8:30 p.m.)	Legislative Hearing: Ban the Can
May 27	8:00–9:00 p.m. (SSA began at 8:30 p.m.)	Clear Channel Governor's Open Mike
August 19	8:05–9:00 p.m.	Ask 'CCO Radio About: Nation's Economy
October 21	8:20–8:50 p.m.	School-Age Pregnancy: Fact and Fancy
December 13	8:05–9:09 p.m. (SSA ended 9 p.m.)	Open Mike: Morals and Ethics in the Suburbs

December 22	8:05–9:00 p.m.	Ask 'CCO Radio About: International Monetary Agreement

Public Affairs/Educational

January 7	8:40–8:50 p.m.	Dissent over Military Service "the Establishment"—a national issue
January 18	8:05–8:20 p.m.	Vocational-Technical Education and the Junior Colleges
January 19	8:05–9:00 p.m.	Open Mike: Campus Unrest
October 19	8:05–8:30 p.m.	Suburban Profile
November 15	8:05–9:30 p.m. (SSA ended 9 p.m.)	Open Mike: School Integration and Bussing
November 29	8:05–9:05 p.m. (SSA ended 9 p.m.)	Open Mike: Government Structure for Suburbia

Religious

Date	*Time*	*Programs*
January 6	5:35–5:55 p.m.	Russian Orthodox Christmas
April 5–9		Messages pertinent to the Christian and Jewish Holy Days
April 5	7:14–7:20 p.m.	(Methodist)
April 6	6:35–6:40 p.m.	(Catholic)
April 7	7:20–7:25 p.m.	(Jewish)
April 8	6:45–6:50 p.m.	(Lutheran)
April 9	6:45–6:50 p.m.	(Greek Orthodox)
September 27	9:06–9:17 p.m.	The Good Is Harder

Instructional

January 22	8:38–10:35 p.m. (SSA ended 9 p.m.)	Minnesota Orchestra Concert
January 27	8:05–9:00 p.m.	Ask 'CCO Radio About: Snowmobiling
February 18	8:30 p.m. (ending time not shown)	Foreign Trade
March 5	8:35–8:55 p.m.	Public Transportation
March 27	Between 8:00–9:00 p.m. (6 min. 40 sec.)	Boat Maintenance and Care
November 8	8:25–8:45 p.m.	On-The-Go: Winter Car Care

December 7	8:05–9:00 p.m.	On-The-Go: Conducting a Symphony Orchestra
December 10	8:30–10:50 p.m. (SSA ended 9 p.m.)	Minnesota Orchestra Concert
December 29	8:30–8:45 p.m.	Black Christmas at Wounded Knee

Instructional Educational

November 5	8:15–10:35 p.m. (SSA ended 10 p.m.)	Minnesota Orchestra Concert

Other

Date	*Time*	*Programs*
May 27	9:20–9:24 p.m.	"From North Dakota. . . ."
September 2	8:55–9:30 p.m.	Federal Meat Inspection Row
September 6	9:00–9:30 p.m.	Labor Day Program
September 9	8:00–8:30 p.m.	Cross Section: The President and Inflation
September 9	Between 9:00–9:30 p.m.	On-The-Go
September 21	8:00–9:00 p.m.	Clear Channel Governor's Open Mike
September 22	9:10–9:20 p.m.	On-The-Go: Nuclear Power
September 27	8:05–9:00 p.m.	Ask 'CCO Radio: About Drugs
September 30	8:11–8:54 p.m.	On-The-Go
November 4	8:05–9:00 p.m.	Will Rogers Revisited
December 1	7:30–7:45 p.m.	A Visit with Melvin Belli

Other Educational

November 1	8:15–8:45 p.m.	Dedication: Jussi Bjorling Fine Arts Center
November 2	8:05–8:30 p.m.	On-The-Go: 18th Century Paintings

99. During SSA hours between January 30–February 12, 1972, WCCO broadcast programming as follows (WCCO Exhibit 72–17, Appendix 4):

All Programming

Program Type	*Hr:Min:Sec*	*Percent*
Agriculture	1:14:00	2.5
Entertainment	20:11:50	41.2

All Programming

Program Type	*Hr:Min:Sec*	*Percent*
News	8:57:30	18.3
Public Affairs	2:11:00	4.5
Religion	1:20:45	2.7
Sports	14:01:00	28.6
All Other	1:06:00	2.2
Total	49:02:05	100.0

News
(Total: 8:57:30 = 100%)

CBS Produced Newscasts	*Locally Produced Newscasts*	*Weather*
4:06:00	4:26:00	25:30
45.8%	49.5%	4.7%

Sports
(Total: 14:01:00 = 100%)

CBS Produced Sports News	*Locally Produced Play-by-Play*	*Sports News*
1:10:00	9:29:00	3:22:00
8.3%	67.7%	24.0%

100. Programs selected by WCCO as "special interest" CBS programs broadcast during January and February 1972, are as follows (WCCO Exhibit 72–17, Appendix 4):

News

Date	*Time*	*Programs*
February 25	8:15–8:45 p.m.	President Nixon: Arrival in Hang Chow
February 27	8:00–8:13 p.m.	The President in China
February 28	8:20–8:40 p.m.	President Nixon: Return to U.S.

Public Affairs

Date	*Time*	*Programs*
January 2	8:30–9:30 p.m. (SSA ended 9 p.m.)	A Conversation with President Nixon
January 25	7:30–7:50 p.m.	President Nixon: Policy Statement
February 20	6:30–7:00 p.m.	The President in China: An Advanced Look

101. Programs selected by WCCO as "special interest" locally-produced programs broadcast during January and February 1972, are as follows (WCCO Exhibit 72–17, Part I, Appendix 4, Attachment A):

Agriculture

Date	*Time*	*Program*
February 4	6:30–7:30 p.m.	Open Mike: New Federal Farm Policies

Public Affairs

January 10	8:05–9:00 p.m.	Open Mike: Parents and the Drug Problem
February 7	8:00–9:00 p.m.	Clear Channel Open Mike: Michigan Governor Milliken
February 14	8:05–9:00 p.m.	Open Mike: Drug Abuse and The Law

Play-by-Play Sport Broadcasts

February 2	7:00–9:15 p.m. (SSA ended 9 p.m.)	N.H.L. Hockey Games: Minnesota North Stars (MNS) v. Toronto Maple Leafs
February 3	6:25–9:00 p.m.	MNS v. Boston Bruins
February 5	8:00–10:20 p.m. (SSA ended 9 p.m.)	MNS v. Buffalo Sabres
February 6	7:30–9:50 p.m. (SSA ended 9 p.m.)	MNS v. Chicago Black Hawks
February 9	8:00–10:20 p.m. (SSA ended 9 p.m.)	MNS v. Los Angeles Kings
February 10	8:00–10:25 p.m. (SSA ended 9 p.m.)	MNS v. St. Louis Blues
February 12	8:00–10:15 p.m. (SSA ended 9 p.m.)	MNS v. Philadelphia Flyers
February 8	6:30–8:00 p.m.	Big 10 Basketball (Minnesota Gophers v. Indiana Hoosiers)

Instructional

January 8	8:30–10:05 p.m. (SSA ended 9 p.m.)	Minnesota Orchestra Concert
January 14	8:35–8:50 p.m.	Enjoy Winter Outdoors
January 23	6:10–6:25 a.m. (SSA ended 6:15 a.m.)	Snowmobile Safety

January 24	8:30–9:30 p.m.	Clear Channel Honest to Goodness
January 26	8:15–8:25 p.m.	Cold Weather Survival
February 28	8:30–9:30 p.m. (SSA ended 9 p.m.)	Clear Channel Honest to Goodness

Instructional/Educational

February 18	8:05–8:30 p.m.	Afro-American History

Other

January 28	8:45–9:00 p.m.	Hot Pants for Heavies

Conclusions on Issue 3

(a) Interference

Primary Service Interference

102. Neither WNYC's present 1 kW SSA nor its proposed 50 kW nighttime operation will cause objectionable interference to the primary service (0.5 mV/m ground wave) contour of the present or proposed operation of WCCO nor to that of any other existing or proposed standard broadcast operation.

Secondary Service Interference

103. WCCO presently receives objectionable interference within its secondary service area from WNYC's 1 kW SSA operation and would continue to receive such interference from WNYC's proposed 50 kW nighttime operation, but to a lesser extent. The above noted objectionable interference areas would also exist with respect to WCCO's proposed operation, except that the respective objectionable interference areas would be to somewhat larger areas and populations (not including interference from WHAS).

104. The objectionable interference to WCCO's present secondary service area, caused by WNYC's present 1 kW SSA operation or that which would be caused by WNYC's proposed 50 kW nighttime operation, embraces portions of Michigan, New York, Pennsylvania, Ohio, West Virginia, Kentucky and Tennessee. At its nearest point, the objectionable interference area is approximately 385 miles from Minneapolis insofar as WNYC's 1 kW SSA operation is concerned and would increase to approximately 420 miles from Minneapolis insofar as WNYC's 50 kW nighttime operation is concerned.

105. The objectionable interference to WCCO's proposed secondary

service area that would be caused by WNYC's present 1 kW SSA operation, embraces portions of the above states plus portions of North Carolina, Alabama and Mississippi. At its nearest point, this objectionable interference area would be approximately 385 miles from Minneapolis and, at its outer extremity, 700 miles from Minneapolis. There would be an additional crescent-shaped objectionable interference area which would embrace a portion of Wisconsin and the upper peninsula of Michigan, with a slight penetration into Iowa. At its center, the near edge of this smaller objectionable interference area would be at a distance of about 200 miles from Minneapolis and its outer edge would be about 240 miles from Minneapolis.

106. The objectionable interference to WCCO's proposed secondary service area that would be caused by WNYC's proposed 50 kW nighttime operation, while somewhat reduced in area from that of the present 1 kW SSA operation, would include the same states. At its nearest point, this objectionable interference area would be about 415 miles from Minneapolis. There would be an additional crescent-shaped objectionable interference area, smaller than that of the present 1 kW SSA operation, which would be entirely confined to the state of Wisconsin. At its center, the near edge of this crescent of objectionable interference is about 220 miles from Minneapolis and about 240 miles from Minneapolis at its outer edge.

(b) Available Service

107. The primary aural services available to the areas and populations within the present WCCO secondary service area that now receives objectionable interference from WNYC's present operation are none in a relatively small area involving a 76,300 population which would be reduced to 51,000 under its proposed 50 kW operation. One primary service is available in the present interference area involving a population of 244,300 which would be reduced to 195,100 under the proposed operation. Finally, two or more services are available to a present population of 7,584,700 which would be reduced to 6,912,500 under the proposed operation. As noted, the areas involved correspond to the population changes. Since WNYC's present 1 kW SSA operation does not cause objectionable interference to the primary service (0.5 mV/m ground wave) contour of any existing or proposed standard broadcast operation, the number of available aural services within the various objectionable interference areas are independent of WNYC's operation.

108. The primary aural services available to the areas and populations within the proposed WCCO secondary service area that would receive objectionable interference from WNYC's present and proposed operations follow the same pattern as above, although the areas and populations involved are larger due to the enlarged coverage of the WCCO

proposal. Again the availability of primary aural services is not a function of WNYC's operation or nonoperation.

Availability of Secondary Service to the Secondary Service Loss Areas

109. Since there are more than ten other secondary services available to any part of the present or proposed WCCO secondary service areas which are predicted to receive objectionable interference from either WNYC's 1 kW SSA or its proposed 50 kW nighttime operation, with respect to available secondary service, all of the above objectionable interference areas are already well served.

(c) Program Service

The Nature and Character of Program Service now Being Rendered by Station WCCO

110. WCCO, a CBS affiliate, broadcasts both CBS and locally-produced programs to the proposed areas and populations.

111. WCCO's entertainment format during evening SSA hours is primarily middle-of-the-road music.

112. In excess of 85 percent of WCCO's locally-produced news programs broadcast during 1970, 1971 and 1972 SSA hours, dealt with material of broad interest, and general appeal. Approximately 6.4 percent and 9.4 percent of the news programs broadcast during SSA hours in 1970 and 1972, respectively, consisted of weather information designed to provide a full area-wide weather picture with particular emphasis on the impact weather conditions have on the farmer, rancher and livestock producer, as well as the traveler, and the trucking and aviation industry; and that approximately half of the news programs broadcast during the early morning SSA hours are devoted to weather information with a format tailored especially to rural needs.

113. The bulk of WCCO's locally-produced sports programs broadcast during SSA hours consist of play-by-play accounts of major league professional sports.

114. During SSA hours WCCO regularly broadcasts programs during 1970, 1971, and 1972 in which entertainment was the largest category (36–41 percent), followed by sports (23–28 percent), news (18–23 percent), public affairs (4.5–6.9 percent), and agriculture (2.5–5.7 percent).

115. There is little doubt as to the high quality and general appeal of the wide range of programming offered by WCCO. However, with respect to the interference area here considered, i.e., Michigan, New York, Pennsylvania, Ohio, West Virginia, Kentucky, Tennessee and Mississippi, there is nothing to indicate that such programming meets the needs or requirements of those areas. As to the CBS network programs, there is

no indication of the extent to which they are duplicated in the available service in those areas.

Issue 4

To determine whether the proposed operation of WCCO would cause objectionable interference to station WHAS, or any other existing standard broadcast station, and, if so, the nature and extent thereof, the areas and populations affected thereby, and the availability of other aural primary service (1 mV/m or greater in the case of FM) and secondary service to such areas and populations.

116. WCCO proposes to relocate its transmitter from its present site in Anoka (WCCO Exhibit 72–3S, Appendix A, Part II) to a site 14 miles to the southwest of its present site. In addition, WCCO proposes to increase its horizontal plane unattenuated field intensity at one mile from 1762 mV/m to 2170 mV/m. This increase in field intensity would result from the greater radiation efficiency of WCCO's proposed Franklin antenna as compared to the radiation efficiency of its present antenna.

117. WHAS, Louisville, Kentucky, as a Class I–A standard broadcast station operating nondirectionally day and night with 50 kilowatts of power on a frequency of 840 kHz. Channel 840 kHz is immediately adjacent to 830 kHz, the channel occupied by WCCO.[3] WHAS's radiation in the horizontal plane produces an unattenuated field intensity of 1810 mV/m at one mile (WCCO Exhibits 72–3S and 72–7).

72–7).

Interference to WHAS's Primary Service Area

118. WHAS's ground wave contours were predicted on the basis of ground conductivities established by a field intensity survey conducted by WHAS (WCCO Exhibits 72–3S and 72–7).

119. Field intensity measurements were used to calculate the distance to WCCO's 0.5 mV/m ground wave contour for daytime interference only.

120. The distances to WCCO's present and proposed 10 percent sky wave contours were predicted by using WCCO's present and proposed radiated fields in the vertical plane in conjunction with Section 73.190 of the Commission's Rules (WCCO Exhibits 72–3S and 72–7).

121. *Daytime Interference:* WHAS is 628 miles southeast of Minneapolis. WCCO's proposed 0.5 mV/m ground wave contour extends less than 130 miles from its antenna in the direction of WHAS (WCCO Exhibit 72–3S, Appendix A, Part II). WHAS's 0.5 mV/m ground wave extends

[3] WHAS does not oppose the WCCO application and has entered into an agreement dated November 1, 1972, (WCCO Exhibit 72–12) under which WHAS agrees not to oppose in exchange for WCCO not opposing a future application by WHAS to construct a similar Franklin antenna.

approximately 130 miles from its antenna in the direction of WCCO (WCCO Exhibit 72–7). Consequently, WCCO's and WHAS's 0.5 mV/m ground wave contours will fall over 340 miles short of overlap and the proposed WCCO operation will not cause objectionable interference to WHAS's daytime primary service area.

122. *Nighttime Interference:* WCCO's present 2.5 mV/m 10 percent sky wave signal falls short of WHAS's 0.5 mV/m ground wave contour by approximately 55 miles. Consequently, WCCO does not presently cause objectionable interference within WHAS's normally protected nighttime primary service area (WCCO Exhibit 72–7).

123. WCCO's proposed 2.5 mV/m 10 percent sky wave signal would extend approximately 62 miles beyond the applicant's present 2.5 mV/m 10 percent sky wave signal, thus penetrating WHAS's 0.5 mV/m ground wave contour to a depth of approximately 7 miles (WCCO Exhibit 72–7).

124. Based upon a desired ground wave to undesired 10 percent sky wave signal ratio of 1 to 5, WCCO's proposed operation would limit WHAS's nighttime interference-free service area to WHAS's 0.53 mV/m ground wave contour (WCCO Exhibit 72–7) and thus cause objectionable interference within WHAS's normally protected 0.5 mV/m ground wave contour. This interference would be in the form of a crescent-shaped area approximately 45 miles in length with a maximum width of about one mile (WCCO Exhibit 72–7). At its nearest point, the crescent of objectionable interference would be approximately 137 miles north-northwest of WHAS's transmitter site, and approximately 117 miles north-northwest of Louisville, WHAS's city of license. The objectionable interference would affect a population of 3,409 within an area of 26 square miles (WCCO Exhibit 72–7).

Availability of Other Service Within WHAS's Primary Service Interference Area

125. All of WHAS's nighttime primary service area that would be lost to objectionable interference from WCCO's proposed operation presently receives nighttime primary service from the Class I standard broadcast stations listed below (WCCO Exhibit 72–7):

Station	*Location*
WBBM	Chicago, Illinois
WGN	Chicago, Illinois
WLS	Chicago, Illinois
WMAQ	Chicago, Illinois
WLW	Cincinnati, Ohio

In addition, all of WHAS's primary service area that would be lost to objectionable interference from WCCO's proposed operation presently

receives nighttime secondary service from the Class I standard broadcast stations listed below (WCCO Exhibit 72–7):

Station	*Location*
WSB	*Atlanta, Georgia*
WCFL	*Chicago, Illinois*
WHO	*Des Moines, Iowa*
KXEL	*Waterloo, Iowa*
WJR	*Detroit, Michigan*
KMOX	*St. Louis, Missouri*
WHAM	*Rochester New York*
WLW	*Cincinnati, Ohio*
WKYC	*Cleveland, Ohio*
KDKA	*Pittsburgh, Pennsylvania*
WSM	*Nashville, Tennessee*
WRVA	*Richmond, Virginia*

Nighttime Interference Within WHAS's Secondary Service Area

126. WHAS's secondary service (0.5 mV/m, 50 percent sky wave) contour was predicted by using the WHAS radiated fields in the vertical plane in conjunction with Section 73.190 of the Commission's Rules (WCCO Exhibits 72–3S and 72–7).

127. The proposed WCCO ground wave signal intensity was predicted on the basis of M3 and not on measured values of conductivity (Tr. 2725), but the use of the latter would have made no significant difference.

128. WCCO's present operation causes objectionable interference within WHAS's nighttime secondary service contour in the vicinity of Minneapolis, Minnesota. WCCO's proposed operation would result in a slight shift of the present interference area to the southwest in conjunction with a net increase in the size of the objectionable interference area within WHAS's secondary service contour. The following is a comparison of the distances in the cardinal and intercardinal compass point directions from the approximate center of Minneapolis to the perimeter of the interference areas (WCCO Exhibit 72–7):

	Distances to Perimeter of Interference Area (miles)	
Direction	*Existing*	*Proposed*
North	69	60
Northeast	57	48
East	40	39
Southeast	33	37
South	45	74
Southwest	38	60
West	50	68
Northwest	65	74

129. In the directions north through east noted above, objectionable interference caused within WHAS's nighttime secondary service contour by WCCO's existing operation exceeds the objectionable interference which would be caused by WCCO's proposed operation. In the remaining directions, i.e., southeast through northwest, the objectionable interference that would be caused by WCCO's proposed operation exceeds the objectionable interference caused by WCCO's existing operation. Thus, WCCO's proposal would result in both gains and losses of secondary service within WHAS's nighttime secondary service contour. There follows the areas and populations that would gain and lose secondary service as a result of WCCO's proposed operation (WCCO Exhibit 72–7):

WHAS Secondary Service	*Area (Sq. Mi.)*	*Population*
Loss	3,768	106,764
Gain	810	18,621
Net Loss	2,958	88,143

Availability of Other Service Within WHAS's Secondary Gain and Loss Areas

130. There are a minimum of two and a maximum of four primary aural services available to WHAS's nighttime secondary service gain area. Within WHAS's nighttime secondary service loss area, there are a minimum of two and a maximum of seven available primary aural services. The above services are provided by various combinations of five standard broadcast stations and sixteen FM stations (WCCO Exhibit 72–7).

131. All of WHAS's secondary service gain and loss areas receive secondary service from the Class I standard broadcast stations indicated below (WCCO Exhibit 72–7):

Station	*Location*
KAAY	Little Rock, Arkansas
WBBM	Chicago, Illinois
WGN	Chicago, Illinois
WLS	Chicago, Illinois
WMAQ	Chicago, Illinois
WHO	Des Moines, Iowa
WJR	Detroit, Michigan
KMOX	St. Louis, Missouri
WLW	Cincinnati, Ohio

All of WHAS's secondary service gain area and a portion of WHAS's secondary service loss area receives secondary service from Class I station KDKA, Pittsburgh, Pennsylvania. Portions of WHAS's secondary service gain and loss areas receive secondary service from Class I stations KOA, Denver, Colorado, and WSM, Nashville, Tennessee.

Interference to Other Existing Standard Broadcast Stations

132. WCCO's proposed operation would not cause objectionable interference to any other existing standard broadcast station.

Conclusions on Issue 4

133. WCCO's proposed operation will not cause objectionable interference to WHAS's daytime primary service area but will cause such interference to the latter's nighttime primary service area affecting a population of 3,409 within an area of 26 square miles in WHAS nighttime operation. That area, presently receives nighttime primary service from five Class I standard broadcast stations and receives nighttime secondary service from twelve Class I standard broadcast stations.

134. WCCO's present operation causes objectionable interference within WHAS's nighttime secondary service contour in the vicinity of Minneapolis, Minnesota, and WCCO's proposed operation would result in a slight shift of the interference area to the southwest in conjunction with a net increase in the size of the objectionable interference area within WHAS's secondary service contour. Further, WCCO's proposal would result in both gains and losses of secondary service within WHAS's nighttime secondary service contour.

135. There are a minimum of two and a maximum of four primary aural services available to WHAS's nighttime secondary service gain area. Further, there are a minimum of two and a maximum of seven available primary aural services within WHAS's nighttime secondary service loss area. The above services are provided by various combinations of five standard broadcast stations and sixteen FM stations.

136. All of WHAS's secondary service gain and loss areas receive secondary service from nine Class I standard broadcast stations; a portion of those areas receives secondary service from Class I station KDKA, Pittsburgh, Pennsylvania; and another portion receives secondary service from Class I stations KOA, Denver, Colorado, and WSM, Nashville, Tennessee.

137. WCCO's proposed operation would not cause objectionable interference to any other existing standard broadcast station.

Issue 5

To determine the extent to which the proposed operation of WCCO results in increased overlap of the 1 mV/m contours of stations WDSM, Superior, Wisconsin, and WCCO.

138. Field intensity measurements were used to calculate the ground wave contours for WCCO's existing and proposed operations (WCCO Exhibits 72–8 and 72–8S).

139. The 1950 WDSM proof of performance field intensity measure-

ments were used to calculate WDSM's ground wave contours (WCCO Exhibits 72–8 and 72–8S).

140. As presently operating, WCCO's 1 mV/m contour overlaps the 1 mV/m contour of WDSM. The overlap occurs within an arc which is approximately 8½ miles in length. The overlap area has a maximum width slightly in excess of two miles (WCCO Exhibit 72–8).

141. Operating as proposed, WCCO's 1 mV/m contour would overlap the 1 mV/m contour of WDSM, but to a lesser extent, (WCCO Exhibits 72–8 and 72–8S) i.e., the same length of arc of overlap would exist, approximately 8½ miles, but the maximum width of the overlap area would be reduced to two miles or slightly less than 2 miles (WCCO Exhibit 72–8).

142. On July 31, 1952, the Commission approved the assignment of the license of station WCCO to Midwest Radio-Television, Inc. On December 12, 1956, the Commission approved the assignment of the license of station WDSM to Northwest Publications, Inc. Midwest and Northwest Publications, Inc. are commonly owned (WCCO Exhibit 72–59), thus bringing into question multiple ownership prohibited by Section 73.35 of the Rules.

143. By petition for leave to amend filed December 10, 1975, approved by order released January 13, 1976, FCC 76M–58, and supplemented by motion, filed March 5, 1976, and approved by order released April 20, 1976, FCC 76M–488, the license of station WDSM, Inc. was assigned to WDSM, Inc., which is owned 51 percent by Robert B. Ridder, Jr., and 49 percent by Robert B. Ridder. Each of the latter plus the wife of Robert B. Ridder, Jr., are the directors of WDSM, Inc. In addition, Robert B. Ridder is chairman and member of the board of directors of Midwest Radio-Television, Inc., licensee of station WCCO, and an officer/director and managing trustee of a voting trust of all of Northwest Publications, Inc. (former owner of station WDSM) stock interest in Mid Continent Radio-Television, Inc., a 53 percent owner of Midwest Radio-Television, Inc.

Conclusions on Issue 5

144. It is concluded that WCCO's proposed operation would reduce rather than increase the existing overlap of WCCO's 1 mV/m contour with the 1 mV/m contour of WDSM.

Issue 6

To determine whether, in the light of the interference that would be received, the proposed nighttime operations of WNYC would be consistent with the requirements of the note to section 73.24(b) of the Commission's rules, and, if not, whether circumstances exist that would warrant a waiver of that section.

145. Neither WNYC's 1 kW SSA or proposed 50 kW daytime operation would cause objectionable interference with WCCO's present and pro-

posed secondary service contours. The areas and populations that receive or would receive objectionable interference from WNYC's proposed 50 kW nighttime operation are:

Interference from WNYC (50 kW)[4]

WCCO Present Operation		*WCCO Proposed Operation*	
Sq. Mi.	*Population*	*Sq. Mi.*	*Population*
125,800	7,158,600	185,600	9,983,600
(12.5%)	(33.3%)	(15.7%)	(38.2%)

The percentages are of the total areas and populations of WCCO's present and proposed service. All of the areas that would receive objectionable interference presently receive at least ten other secondary services.

WNYC Nighttime Limitations Imposed by WCCO

146. The normal nighttime protection afforded to station WNYC is to its 2.5 mV/m ground wave contour. The nighttime limitation imposed by WCCO's present operation is to WNYC's 10.7 mV/m contour. The nighttime limitation imposed by WCCO's proposed operation would be to WNYC's 12.7 mV/m contour (WNYC Exhibit 72–104).

Interference to WNYC's Proposed 50 kW Nighttime Operation

147. The normally protected 2.5 mV/m contour of WNYC's proposed 50 kW nighttime operation would completely encompass New York City, as well as portions of the states of New Jersey, Connecticut, and numerous counties with New York State to the north and to the east of New York City (WNYC Exhibit 72–111). The total population within WNYC's 2.5 mV/m contour would be 14,025,582 within an area of 2,093 square miles. The areas and populations which would receive service from WNYC's proposed 50 kW nighttime operation and the areas and populations which would experience objectionable interference from WCCO are tabulated below (WNYC Exhibit 72–111):

	10.7 mV/m Contour		*12.7 mV/m Contour*	
	Sq. Mi.	*Population*	*Sq. Mi.*	*Population*
Service	326.8	9,926,159	310.8	9,466,507
Portion of 2.5 mV/m Contour	15.6%	70.8%	14.8%	67.5%
Loss of Service	1766.2	4,099,423	1728.2	4,559,075
Portion of 2.5 mV/m Contour	84.4%	29.2%	85.2%	35.5%

[4] See Paragraphs 82 and 83, *supra*, for figures related to the 1 kW SSA proposal.

148. *Within New York City:* With a population of 7,894,862 and an area of 300 square miles, New York City's share of the total population and area within WNYC's proposed 50 kW nighttime 2.5 mV/m contour would be 56.3 percent and 14.3 percent, respectively. The areas and populations within New York City which would receive service from WNYC's proposed 50 kW nighttime operation and the areas and populations that would be subject to objectionable interference from WCCO are:

	10.7 mV/m Contour		*12.7 mV/m Contour*	
	Sq. Mi.	*Population*	*Sq. Mi.*	*Population*
Service	290	7,869,972	282	7,785,694
Portion of City	96.7%	99.7%	94.0%	98.6%
Loss of Service	10	24,890	18	109,168
Portion of City	3.3%	0.3%	6.0%	1.4%

149. Tabulated below is a breakdown by boroughs of the population of New York City that would receive service and the populations that would not receive service from WNYC's proposed 50 kW nighttime operation (WNYC Exhibit 72–111):

Population to be Served by WNYC's Proposed 50 kW Operation

	10.7 mV/m Contour		*12.7 mV/m Contour*	
	Would Be Served	*Would Not Be Served*	*Would Be Served*	*Would Not Be Served*
Bronx	1,471,701	0	1,471,701	0
Brooklyn	2,602,012	0	2,602.012	0
Manhattan	1,539,233	0	1,539,233	0
Queens	1,964,880	21,593	1,887,602	98,971
Richmond	292,146	3,297	285,146	10,297
Total	7,869,972	24,890	7,785,694	109,168
Portion of City	99.7%	0.3%	98.6%	1.4%

150. There are twelve full-time standard broadcast stations and sixteen Class B FM stations licensed to New York City.

151. *Outside New York City:* The population outside New York City within the 2.5 mV/m contour of WNYC's proposed 50 kW nighttime operation is 6,130,720 and is located within an area of 1,793 square miles. The areas and populations outside New York City that would receive service from WNYC's proposed 50 kW nighttime operation and the areas and populations that would receive objectionable interference from WCCO are tabulated below:

	10.7 mV/m Contour		*12.7 mV/m Contour*	
	Sq. Mi.	*Population*	*Sq. Mi.*	*Population*
Service	368	2,056,187	288	1,680,813
Portion of 2.5 mV/m Contour	20.5%	33.5%	16.1%	27.4%
Service Loss	1,425	4,074,533	1,105	4,449,907
Portion of 2.5 mV/m Contour	79.5%	66.5%	83.9%	72.6%

For WNYC's normally protected, or for either of the above interference-free service contours, there would be more than five primary aural services available to any part of the area and considerably more than five to most of it.

152. The greater part of WNYC's proposed 50 kW nighttime service outside New York City is within the New York SMSA and that part of the New York-Northeastern New Jersey SCA which is not a part of the New York SMSA. The populations within the above areas that would receive primary service from WNYC's proposed 50 kW nighttime service and the percentage each represents of the total primary service that would be rendered outside New York City by WNYC's proposed 50 kW nighttime operation are tabulated below (WNYC Exhibit 72–111):

Location	*10.7 mV/m Contour Population*	*12.7 mV/m Contour Population*
Within NY SMSA	541,112 (26.3%)	328,674 (19.6%)
Within NY-NJ SCA	1,147,263 (55.8%)	1,029,284 (61.2%)
Unidentified with NYC	367,812 (17.9%)	322,855 (19.2%)

Conclusions on Issue 6

153. The note to Section 73.24(b) as it existed when the issue was specified and the evidence taken reads in part as follows:

> The preceding provisions of this paragraph (b) shall not be applied to applications for new Class II-A stations or to applications accepted for filing before July 13, 1964. With respect to such applications, a showing must be made that:
>
> (a) Objectionable interference will not be caused to existing stations or that, if interference will be caused, the need for the proposed service outweighs the need for the service which will be lost by reason of such interference. . . .
>
> (b) The proposed station will not suffer interference to such an extent that its service would be reduced to an unsatisfactory degree (See Sec. 73.28(d)).

154. Section 73.28(d) which is parenthetically referred to, is as follows:

> With respect to applications for new Class II-A stations . . . accepted for filing before July 13, 1964, the following shall apply: Upon showing that a need exists, a Class II . . . station may be assigned to a channel available for such class, even though interference will be received within its normally protected contour, subject to the following condi-

> tions: . . . (2) Primary service will be provided to the community in which the proposed station is to be located; (3) The interference received does not affect more than 10 percent of the population in the proposed station's normally protected primary service area; however, in the event that nighttime interference received by a proposed Class II . . . station would exceed this amount, then an assignment may be made if the proposed station would provide either a standard broadcast nighttime facility to a community not having such a facility or if 25 percent or more of the nighttime primary service area of the proposed station is without primary nighttime service. . . .

Subsequent to the taking of evidence on this issue, the section was modified without change in substance.

155. Rather than proposing findings with respect to a possible waiver of these requirements, the Bureau and Midwest argue, in effect, that no waiver is justified because the rule is not met, particularly the 10 percent requirement. This ignores the issue as stated by the Commission. *City of New York Municipal Broadcasting System*, 11 FCC 2d 287 (1968) dealing with the then Issue 3.

156. The WNYC 50 kW nighttime operation will violate the 10 percent limitation stated as to interference received as this will amount to 29.2 percent of population with the present WCCO operation and 32.5 percent with WCCO's proposed operations, within the WNYC 2.5 mV/m contour. The comparable percentages for the 1 kW SSA proposal are 49.6 and 54.4 percent. Accordingly, the only question is whether the rule should be waived.

157. Within New York City itself, with a population of 7,894,862, the percentage of population that would receive objectionable interference will be only 0.3 percent as to the WCCO's present operation and 1.4 percent as to the latter's proposed operation. Outside the city the percentages are 66.5 percent and 72.6 percent, respectively, which high figures account for the high total figures when averaged with the low loss within the city. As found elsewhere, this out-of-city area is an incident, not an objective, of the WNYC proposal which will enlarge its present coverage of its city of license. Moreover, that area is well served by other stations.

158. While the Commission has been reluctant to waive the so-called 10 percent rule—and the Bureau and Midwest cite cases in which the Commission has refused to do so—the unique situation presented here of a municipally-owned station of many years operation can improve its coverage of the city of license. Accordingly, it is concluded that it would be in the public interest to waive the restrictions of the note to Section 73.24(b) of the Rules.

Issue 7

> To determine whether the 50 kW proposal of the City of New York Municipal Broadcasting System would seriously prejudice future consideration of the 820-, 830-, and 840-kc Class I-A channels.

820 kHz

159. The Class I-A station on 820 kHz is WBAP Fort Worth, Texas. WBAP's operating power is 50 kW (WNYC Exhibit 72–105).

160. The 500-mile extension of the 0.5 mV/m 50 percent nighttime contour (hereinafter "500-mile extension" contemplated by Section 1.569 of the Rules) of WBAP is described by WNYC as a circle with an approximate radius of 1,250 miles with the center located at Fort Worth, Texas. WBAP's 500-mile extension encompasses the vast majority of the land area of the continental United States, entering the United States slightly west of Los Angeles, California, and continuing in a clockwise manner passing through Nevada, Idaho (east of Boise), Montana (northwest of Helena), Canada, New York (just east of Buffalo), Pennsylvania (east of Harrisburg), and North Carolina (just east of that state's outer banks) (WNYC Exhibit 72–105). The following states are located in whole or in part outside WBAP's 500-mile extension (WNYC Exhibit 72–105):

Western States	*Eastern States*
California	Connecticut
Idaho	Delaware
Montana	Maine
Nevada	Maryland
Oregon	Massachusetts
Washington	New Hampshire
	New Jersey
	New York
	Pennsylvania
	Rhode Island
	Vermont
	Virginia

161. A potential Class II-A station on 820 kHz could be located in any one of the 18 states listed immediately above (WNYC Exhibit 72–105). Such stations operate unlimited time with a minimum of 10 kW nighttime and a maximum of 50 kW at any time. At least 25 percent of the area or population within their nighttime interference-free service areas must not have other nighttime primary service. Sections 73.21(a)(2)(i) and 72.22(b) of the Commission's Rules. The area where the daytime 0.5 mV/m contour of a potential Class II-A operation could overlap WNYC's proposed 0.5 mV/m contour is bounded by WBAP's 500-mile extension and the daytime contours of certain existing stations embracing the states of Connecticut, Delaware, Maryland, New Jersey, New York, Pennsylvania, and Virginia. Those existing stations which preclude a Class II-A operation in certain areas because of daytime overlap considerations are:

Station	*Location*	*Facilities (day)*
WYRE	Annapolis, Maryland	810 kHz, 250 W
WGY	Schenectady, New York	810 kHz, 50 kW
WNYC	New York, New York	830 kHz, 1 kW, DA
WLAD	Danbury, Connecticut	800 kHz, 1 kW
WTMR	Camden, New Jersey	800 kHz, 5 kW, DA
WRYM	New Britain, Connecticut	840 kHz, 1 kW
WVPO	Stroudsburg, Pennsylvania	840 kHz, 250 W
WAEB	Allentown, Pennsylvania	790 kHz, 1 kW, DA
WEEU	Reading, Pennsylvania	850 kHz, 1 kW

Stations which provide nighttime service in areas where WNYC's proposed 50 kW presunrise and postsunset operation could affect a potential Class II-A operation on 820 kHz are as follows:

Station	*Location*	*Facilities (night)*
WNBC	New York, New York	660 kHz, 50 kW
KYW	Philadelphia, Pennsylvania	1060 kHz, 50 kW, DA
WTIC	Hartford, Connecticut	1080 kHz, 50 kW, DA
WBAL	Baltimore, Maryland	1090 kHz, 50 kW, DA
WILK	Wilkes-Barre, Pennsylvania	980 kHz, 1 kW, DA
WHLM	Bloomsburg, Pennsylvania	550 kHz, 1 kW, DA
WARM	Scranton, Pennsylvania	590 kHz, 5 kW, DA
WETT	Ocean City, Maryland	1590 kHz, 500 W, DA
WBOC	Salisbury, Maryland	960 kHz, 1 kW, DA

These stations provide service to most of the area in question. However, two portions of the subject area are without any nighttime primary AM service. These two portions are: (1) an area west and north of Scranton, Pennsylvania; and (2) an area southeast of Salisbury, Maryland. The following communities of more than 1,000 persons are located in the areas which do not have primary nighttime AM service and within which a potential Class II-A operation on 820 kHz could be located and involve 0.5 mV/m overlap with WNYC's proposed 50 kW operation (WNYC Exhibit 72–105):

Community	*1970 Population*
Berlin, Maryland	1,942
Pocomoke City, Maryland	3,573
Snow Hill, Maryland	2,201
Chincoteague, Virginia	1,867
Shickshinny, Pennsylvania	1,685
Dalton, Pennsylvania	1,282
Benton, Pennsylvania	1,027
Montrose, Pennsylvania	2,058

162. A potential Class II-A 10 kW operation could be located at

Pocomoke City or Snow Hill and not involve any prohibited overlap with WNYC's proposed 50 kW operation (WNYC Exhibit 72–105).

163. Elizabeth Dahlberg, consulting engineer for WNYC, is of the view that the WNYC 50 kW proposal will not seriously prejudice the future consideration of the co-channel and adjacent Class I-A channels.

830 kHz

164. The Class I-A station on 830 kHz is WCCO. It is located in Minneapolis, Minnesota, and presently operates with 50 kW. WCCO's proposed 50 kW operation is, in part, the subject of this proceeding.

165. The 500-mile extension of WCCO's existing operation is described by WNYC as a circle with an approximate radius of 1,250 miles with the center located at Minneapolis, Minnesota (hereinafter referred to as "WCCO's 500-mile extension"). WCCO's 500-mile extension also encompasses the vast majority of the land area of the continental United States. Specifically, WCCO's 500-mile extension enters the United States at the Washington/Canadian border and continues in a counterclockwise manner passing through Oregon, Nevada, and the tristate junction of Arizona, Nevada, and Utah; thence passing through Arizona (east of Phoenix), portions of New Mexico, Mexico, Texas, the Gulf of Mexico, Florida (south of Jacksonville), the Atlantic Ocean; and finally passing through the eastern portion of Maine (WNYC Exhibit 72–105). The following states are located in whole or in part outside WCCO's 500-mile extension (WNYC Exhibit 72–105):

Western States	*Eastern States*
Arizona	Florida
California	Maine
Nevada	
New Mexico	
Oregon	
Texas	
Washington	

The 500-mile extension of WCCO's proposed operation is similar to its existing 500-mile extension, except that the approximate radius of the latter extension is increased to 1,320 miles. In addition, the above-listed states are reduced by two, i.e., New Mexico and Maine (WNYC Exhibit 72–105).

Potential Class II-A Station on 830 kHz

166. A potential Class II-A operation on 830 kHz could be located in any one of nine states: Arizona, California, Nevada, New Mexico, Oregon, Texas, Washington, Florida or Maine (WNYC Exhibit 72–105). An area

within which WNYC's proposed 50 kW nighttime operation would increase the nighttime root-sum square (RSS) limitation [Section 73.182(o) of the Rules] of a potential Class II-A station on 830 kHz is approximately 200 miles wide and extends across central Florida from the Atlantic Ocean to the Gulf of Mexico (WNYC Exhibit 72–105). This area includes 25 separate locations in Florida. The nighttime limitations at these 25 locations are as follows (WNYC Exhibit 72–105):

830 kHz Nighttime Limitations

Location	*From Existing WCCO mV/m*	*From CMBZ mV/m*	*Existing RSS mV/m*	*From Proposed WNYC (50 kW) mV/m*	*RSS with Proposed WNYC (50 kW) mV/m*
Palatka	5.9	< 2	5.9	3.7	7.0
Ocala	5.7	< 2	5.7	3.3	6.6
Crystal River	5.6	< 2	5.6	2.9	6.3
Daytona Beach	5.4	< 2	5.4	3.8	6.6
De Land	5.3	< 2	5.3	3.5	6.4
Mount Dora	5.3	< 2	5.3	3.3	6.3
Dade City	5.1	< 2	5.1	2.9	5.9
Tarpon Springs	5.1	< 2	5.1	2.6	5.7
Titusville	4.8	< 2	4.8	3.7	6.0
Orlando	5.0	< 2	5.0	3.3	6.0
Tampa	4.9	< 2	4.9	2.6	5.5
St. Petersburg	4.9	< 2	4.9	2.5	5.5
Melbourne	4.6	2.2	4.6	3.4	5.7
Lake Wales	4.7	1.7	4.7	2.9	5.5
Bradenton	4.8	< 2	4.8	2.38	4.8
Vero Beach	4.3	2.8	5.1	3.2	6.0
Sebring	4.4	2.1	4.4	2.8	5.2
Sarasota	4.6	1.6	4.6	2.4	5.2
Stuart	4.0	3.5	5.3	3.1	6.2
Arcadia	4.4	2.16	4.4	2.5	5.1
Venice	4.4	2.0	4.4	2.2	4.9
W. Palm Beach	3.8	4.6	6.0	3.0	6.6
Belle Glade	3.9	4.0	5.6	2.7	5.6
Punta Gorda	4.2	2.4	4.8	2.3	4.8
Fort Myers	4.1	2.8	5.0	2.3	5.0

167. The eastern portion of Maine comprises another area within which WNYC's proposed presunrise and postsunset 50 kW operation would increase the nighttime RSS limitation of a potential Class II-A station on 830 kHz.[5] Specifically, WNYC's proposed 50 kW presunrise and

[5] In this connection, it is noted that a proposal to allocate a fulltime Class II-A station on 820 kHz at Ellsworth, Maine, RM–1483, was withdrawn and dismissed on December 9, 1974.

postsunset operation would cause the nighttime limit in this area to be in excess of 50 mV/m (WNYC Exhibit 72–105). The area has a population of 25,160 persons within a 1,500 square mile area, of which 22,340 are located within 1,482 of the above square mile area presently receive no nighttime primary AM service (WNYC Exhibit 72–105). The following Maine communities of more than 1,000 persons are located in the above 1,482 square mile area:

Community	*Population*
Calais	4,044
Machias	2,441
Eastport	1,989
Lubec	1,949
Baileyville	1,863
Jonesport	1,326
East Machias	1,057

Stations which provide nighttime service in the above area are as follows (WNYC Exhibit 72–105):

Station	*Location*	*Facilities (night)*
WQDY	Calais, Maine	1230 kHz, 250W
WMCH	Machias, Maine	1400 kHz, 250W

168. WNYC designed a hypothetical Class II-A station which would operate on 830 kHz with an assumed power of 10 kW. This hypothetical station would employ a directional antenna array and have a radiation pattern which would protect WCCO from objectionable interference and provide service to Calais, Maine. In addition, this station's interference-free nighttime limitation would be to its 5.6 mV/m contour due to the existing operation of WCCO, and to its 8 mV/m contour due to the additional nighttime signal from the existing temporary SSA operation of WNYC. Seven thousand two hundred sixty (7,260) persons in a 167 square mile area are located within the 5.6 mV/m nighttime RSS limitation contour of the hypothetical Class II-A station. Six thousand two hundred forty (6,240) such persons are located within 160 of the above 167 square mile area presently receive no nighttime primary AM service. Further, six thousand seven hundred seventy (6,770) persons in a 123 square mile area are located within the 8 mV/m nighttime RSS limitation contour of the above hypothetical Class II-A station. Five thousand seven hundred fifty (5,750) such persons are located within 116 of the above 123 square mile area presently receive no nighttime primary AM service (WNYC Exhibit 72–105).

Potential Class II-A Station on 830 kHz

169. A potential Class II-A operation on 830 kHz could be located in any one of the seven previously indicated states. An area within such WNYC's 50 kW presunrise and postsunset operation would increase the nighttime RSS limitation of a potential Class II-A station on 830 kHz is roughly rectangular in shape (approximately 60 × 110 miles) and located along the Atlantic coast of central Florida (WNYC Exhibit 72–105). The nighttime limitations at 12 locations within that rectangular area in Florida are as follows (WNYC Exhibit 72–105):

830 kHz Nighttime Limitations

Location	*From Proposed WCCO mV/m*	*From CMBZ mV/m*	*Existing RSS mV/m*	*From Proposed WNYC (50 kW) mV/m*	*RSS with Proposed WNYC (50 kW) mV/m*
Titusville	6.1	< 2	6.1	3.7	7.1
Orlando	6.0	< 2	6.0	3.3	6.8
St. Cloud	5.9	< 2	5.9	3.1	6.7
Haines City	5.95	< 2	5.95	2.94	5.95
Melbourne	5.6	2.2	5.6	3.4	6.6
Lake Wales	5.8	< 2	5.8	2.87	5.8
Vero Beach	5.2	2.8	5.9	3.2	6.1
Sebring	5.5	2.1	5.5	2.8	6.2
Stuart	5.0	3.5	6.1	3.1	6.8
Hobe Sound	4.9	3.9	6.3	3.1	5.3
Okeechobee	5.2	3.0	6.0	2.9	6.0
Brighton	5.2	2.7	5.8	2.8	5.9

170. Since the 500-mile extension of WCCO's proposed operation encompasses the entire state of Maine, a Class II-A operation on 830 kHz in Maine would be precluded by a grant of WCCO's proposed operation (WNYC Exhibit 72–105).

840 kHz

171. WHAS, Louisville, Kentucky, the Class I-A assignment on 840 kHz, is located 624 miles west of the proposed WNYC site. A potential Class II-A assignment must be located *beyond* the 500-mile extension of the WHAS 0.5 mV/m 50 percent sky wave or more than 1,255 miles from WHAS which is at least 631 miles from WNYC. There is no possibility of the proposed WNYC 50 kW operation on 830 kHz precluding a potential 840 kHz assignment located more than 631 miles away. See Section 1.569 (c)(2)(i) of the Rules.

Conclusions on Issue 7

172. Issue 7 (originally identified as Issue 4 when specified in 1967, 8

FCC 2d 1047) was originally to determine the effect of the WNYC proposal on the 820 and 840 kc Class I-A channels. The issue was later enlarged to embrace 830 kc Class I-A channel as well. *WNYC*, 11 FCC 2d 287 (1968). These three frequencies were held in *status quo* in *Clear Channel Broadcasting*, 31 FCC 565. There, the Commission, in deferring consideration of these channels which are designated as "clear channels" and speaking of "the future possibilities for employing other techniques of clear-channel utilization," noted that one would be:

> . . . the use of higher power to improve the nighttime range of, and, within existing service areas, the quality of, skywave service reaching into the vast land areas where this is the only available technique for improving service since much of those areas lie beyond the foreseeable range of the primary service of any new stations which could be fitted into the crowded standard broadcast spectrum. Whether the public interest would be served by the authorization of higher power; whether, . . . duplication . . . would serve the public interest; or whether any other alternative including possible combinations of these techniques would best serve to improve service on these channels, we do not now decide. *Clear Channel Broadcasting*, 31 FCC 573.

That same decision noted the pendency of the WNYC proceeding involving the use of the 830 kc channel.

820 kHz

173. The Class I-A station on this channel is WBAP, Fort Worth, Texas. WBAP is authorized to operate with a power of 50 kw.

Potential Class II-A Station

174. There are certain areas in which a potential Class II-A station could be located and involve prohibited overlap with WNYC's proposed 50 kW operation. The first region is located near Scranton, Pennsylvania, and the second is located southeast of Salisbury, Maryland. The communities with populations of over 1,000 which fall within the white areas and which could be the site of a potential Class II-A station are listed in the findings.

175. A 10 kW Class II-A operation could be located at Pocomoke City of Snow Hill, Maryland, in the small segment of the Maryland "Eastern Shore" where there is no nighttime AM service, and not involve prohibited overlap with WNYC's proposed 50 kW operation. The region near Scranton, Pennsylvania, where no nighttime AM service is available and does not involve prohibited overlap with WNYC's proposed 50 kW operation, is indicated to be mountainous and lacking in communities of any size. The record contains no evidence to indicate the area or population available to these potential Class II-A stations, and it is not possible to conclude the precise degree of prejudice that WNYC's proposed 50 kW operation would impose on the use of the 820 kHz channel. While there are at least eight communities, each with a population of over 1,000, that

could qualify as the location of a potential Class II-A station and thereby eliminate certain amounts of white area, those areas are lacking in substantial population. While the elimination of any part of this white areas by assignment of a Class II-A station on this 820 kHz would be precluded by a grant of the WNYC proposal it cannot be considered as a "serious prejudice" to the future establishment of a Class II-A station on 820 kHz in the light of the countervailing benefits of the WNYC proposal described elsewhere. Accordingly, it is concluded that WNYC's proposed 50 kW operation would not seriously prejudice future consideration of the 820 kHz Class I-A channel.

Potential for Higher Power for WBAP

176. The engineering exhibits submitted by WNYC did not deal with possible higher power for WBAP, a Class I station at Fort Worth, Texas. In Reply to Proposed Findings, WNYC contends, however, that it is clear from the evidence of record that the WNYC proposal would have no effect on future consideration of higher power operation for station WBAP, citing the over 1,360 mile separation of the WBAP and WNYC sites. "Section 73.182(w) of the *Rules* provides that the secondary service of a Class I station is not protected from adjacent channel interference, but that the 0.5 mv/m groundwave contour is protected from adjacent channel interference (ratio of 1 to 5, desired to undesired). Figure 1 of WNYC 72–112 shows that the WNYC proposed 0.025 mv/m 10% skywave contour, which is 1/100th of the permitted signal, falls in excess of 400 miles short of Fort Worth. The map also shows that the existing WCCO skywave contour (0.5 mv/m 50%) in the Dallas area is at least 20 times stronger than the proposed WNYC signal. Even if WBAP were to be permitted to operate with super-power, there clearly would be no possibility of any potential Class II-A operation in the United States which could be affected by the WNYC 50 kw proposal."[6] Moreover, as previously noted the engineering witness was of the categorical opinion that the WNYC proposal did not jeopardize future use of the three stated frequencies.

830 kHz

177. The Class I-A station on 830 kHz is WCCO, Minneapolis, Minnesota. WCCO is authorized to operate with a power of 50 kW.

Potential Class II-A Station

178. There are certain areas in which a Class II-A station on 830 kHz could be located. This station would receive increased nighttime limita-

[6] While the question of super-power was raised in 1968 when the issue was revised, none has yet been authorized.

tion as a result of WNYC's 50 kW presunrise and postsunset proposal. These areas are located in central Florida and eastern Maine.

179. *Florida:* At 21 of 25 locations in central Florida, the RSS nighttime limitation would be increased if WNYC's 50 kW proposal is granted. For example, if WNYC's proposed 50 kW presunrise and postsunset operation is granted, the existing RSS limitation of 4.8 mV/m at Titusville would be increased to 6.0 mV/m, an increase of 25 percent. However, the record contains no evidence to indicate what effect such nighttime RSS limitation would have on a potential Class II-A station operation on 830 kHz if it is located in this area. In view of the foregoing, it must be concluded that WNYC's proposed 50 kW presunrise and postsunset operation would seriously prejudice future consideration of a Class II-A station on 820 kHz.

180. *Maine:* If WNYC's proposed 50 kW presunrise and postsunset operation is granted, an area in eastern Maine would be subjected to a nighttime RSS limitation in excess of 50 mV/m. This area has a population of 25,160 persons within a 1,500 square mile area. Twenty-two thousand three hundred and forty (22,340) such persons located within 1,482 of the above area presently receive no nighttime primary AM service. The subject area contains at least seven communities in which a potential Class II-A station on 830 kHz could be located. WNYC designed a hypothetical Class II-A station which would operate on 830 kHz with an assumed power of 10 kW. Such station would employ a directional antenna array and have a radiation pattern which would protect WCCO from objectionable interference and provide service to Calais, Maine. In addition, this station's interference-free night-time limitation would be to its 5.6 mV/m contour due to the existing operation of WCCO and would provide service to 7,260 persons in a 167 square mile area. Six thousand two hundred forty (6,240) such persons located within 160 of the 167 square mile area presently receive no nighttime primary AM service. It is concluded that WNYC's proposed 50 kW operation would not seriously prejudice the future consideration of the 830 kHz Class I-A channel.

840 kHz

181. The Class I-A station on 840 kHz is WHAS, Louisville, Kentucky. The area encompassed by the 500-mile extension of WHAS's 0.5 mV/m 50 percent nighttime contour is an area within the bounds of 131 miles and 631 miles beyond WNYC's proposed site. It must therefore be concluded that the location of said area precludes the location of a Class II-A station therein which would be affected by WNYC's proposed 50 kW operation.

182. In view of the above, it is concluded that WNYC's proposed 50 kW operation would not seriously prejudice future consideration of the 840 kHz Class I-A channel.

Issue 8

To determine whether the 50 kW transmitter site proposed by the City of New York Municipal Broadcasting System is satisfactory with particular regard to any conditions that may exist in the vicinity of the antenna system which would distort the proposed antenna radiation pattern.

WNYC's Proposed Antenna Site

183. WNYC's proposed transmitter site is located on Staten Island on the northern part of the Sea View Hospital property between Brielle Avenue and Manor Road (WNYC Exhibits 72–106 and 72–107). This site is approximately 12–3/4 miles southwest of WNYC's present site, which is located in Brooklyn (WNYC Exhibits 72–101, 72–106, and 72–107). WNYC's site is a large tract of land required to accommodate the approximately 1260′ × 1260′ antenna and ground system proposed to be used by WNYC (WNYC Exhibit 72–107). The six antennas which WNYC proposes to use form a parallelogram 658.6′ on a side. An additional 300 foot projection from each tower is required so as to provide slightly more than the quarter wavelength ground system required by Section 73.189(b) (5) of the Commission's Rules.

184. Aerial photographs, maps, and a personal inspection of the site by WNYC's engineering consultants established the existence of wooden poles supporting low voltage distribution lines and houses along the streets in the vicinity of WNYC's proposed site (WNYC Exhibits 72–106, 72–107, and 72–109). There are numerous roads, streets and open areas surrounding WNYC's proposed site. Accordingly, the area to the west, a direction toward which WNYC must afford WCCO protection from objectionable interference, is well suited for conducting field intensity measurements and for selecting suitable monitoring points that would be required by the Commission's Rules to establish the performance of WNYC's proposed 50 kW directional antenna system (WNYC Exhibit 72–107; Tr. 2356). There are trees in the lower half of the site extending to some buildings which are within the proposed ground system (Tr. 2349). The site will be cleared of growth and some of the buildings will be razed (Tr. 2348). The site will be leveled in such a manner that the tower bases will be at essentially the same elevations, i.e., with variations of only a few feet. The entire ground system area, however, would not be leveled to that extent (Tr. 2366-2368).

Potential Reradiators

185. There are no objects adjacent to the proposed antenna site that are likely to cause a serious reradiation problem. However, there are potential reradiators of 830 kHz energy in the general vicinity of the proposed site (WNYC Exhibit 72–106). The reradiation potential of the following were considered: (1) two smoke stacks at Sea View Hospital; (2) the water

tank at Willowbrook State School; (3) the Instructional Television Fixed Service (ITFS) tower at St. Francis Seminary; (4) the New York City Fire Department two-way radio tower on Slossom Avenue; (5) two FAA towers; and (6) Wagner High School, the latter having been constructed subsequent to the filing of the WNYC application (WNYC Exhibit 72–106; WCCO Exhibit 72–23; and Tr. 2353, 3855, 3856, and 3881).

186. Ronald Culver, WNYC's engineering consultant, testified that the two smoke stacks at Sea View Hospital, the water tank at Willowbrook State School, all of which were present when the site was selected in 1964, and the ITFS tower, subsequently erected in 1967, represent possible sources of reradiation. Culver's testimony is based on the fact that the height of each of these four structures is large with respect to a quarter wavelength at 830 kHz (WNYC Exhibit 72–106; Tr. 2352).

187. However, Wagner High School, construction of which started in 1966, is a more complex source of reradiation than the smoke stacks, the water tank or the ITFS tower, as hereinafter discussed in greater detail.

The Two Smoke Stacks

188. The two smoke stacks are located at the Sea View Hospital power plant. With respect to WNYC's proposed antenna site, these two smoke stacks lie in a direction of proposed radiation suppression of WNYC's 50 kW presunrise and postsunset operation (hereinafter "nighttime operation") and in the direction of a major radiation lobe of WNYC's proposed 50 kW daytime operation. The smoke stacks, which are constructed of brick, are located at an approximate bearing of 215° and a distance of approximately 0.34 miles from the center of WNYC's proposed antenna site (WNYC Exhibit 72–106). The height above ground level of each stack is 180 feet. Two lightning rods are installed on the southernmost stack, and a single lightning rod on the other stack (WNYC Exhibit 72–106; Tr. 2302). Each lightning rod extends from ground level to a point slightly above the top of each stack (WNYC Exhibit 72–106).

The Water Tank

189. The water tank is on the Willowbrook School property. With respect to WNYC's proposed antenna site, the water tank lies in the direction of maximum radiation suppression of both WNYC's proposed 50 kW daytime and nighttime operations (WNYC Exhibit 72–106; WCCO Exhibit 72–23; Tr. 2353–2354). The water tank is located at an approximate bearing of 291° and a distance of approximately 0.6 miles from the center of WNYC's proposed antenna site. The water tank is a fairly short "stand pipe" structure with an overall height of 135 feet and a diameter of 25 feet (WNYC Exhibit 72–106).

The ITFS Tower

190. The ITFS tower supports the antenna of station KRS–82, operated by the Archdiocese of New York, St. Francis Seminary (WCCO Exhibit 72–23). With respect to WNYC's proposed antenna site, the ITFS tower lies in the direction of the major lobe of radiation of WNYC's proposed 50 kW nighttime operation and in the direction of one of the three major lobes of radiation of WNYC's proposed 50 kW daytime operation (WNYC Exhibits 72–101 and 72–106). The ITFS tower is located at an approximate bearing of 84° and a distance of approximately 0.8 miles from the center of WNYC's proposed antenna site (WNYC Exhibit 72–106 and WCCO Exhibit 72–23). The above ground level height of the tower is 295 feet. The overall height of the ITFS antenna and its obstruction lighting is 310 feet. The tower is a triangular steel structure with a face width of 18 inches. It is guyed in three directions at approximately its 100, 200, and 295 foot levels (WNYC Exhibit 72–106).

Detuning of the Smoke Stacks, the Water Tank, and the ITFS Tower

191. The organizations controlling the smoke stacks, the water tank, and the ITFS tower have agreed to cooperate with WNYC in detuning the structures (WNYC Exhibit 72–106). Culver testified that detuning would be accomplished by installing drapes on the structures which would be tuned so as to serve as traps. Culver further testified that a single tower should be erected prior to construction of the entire array. Non-directional field intensity measurements of that tower's radiation could then be made to establish whether or not any of the structures are sources of serious reradiation (Tr. 2353). WCCO's engineers concede that the reradiation from the smoke stacks, the water tank, and the ITFS tower can be controlled and reduced in magnitude to an extent that such structures will not seriously distort WNYC's proposed 50 kW radiation patterns (WNYC Exhibit 72–106; WCCO Exhibit 72–23; Tr. 2353–2356).

Wagner High School

192. Of all the potential reradiators, Wagner High School (hereinafter WHS) would be the most serious source of reradiation and, according to the WCCO engineering consultants would distort the WNYC proposed nighttime radiation pattern and cause the predicted MEOV to be exceeded by nearly six times toward the WCCO primary and secondary areas. WHS is located northeast of and on property adjacent to that of WNYC's proposed antenna site (WNYC Exhibit 72–105; WCCO Exhibit 72–23; Tr. 3856). WHS occupies an area of approximately 160,000 square feet. The height of the building varies from 11 feet for a 1-story portion, to 25 and 35 feet, respectively, for a 2 and 3-story portion, and to 56 and 70 feet, respectively, for a 5-story and a penthouse portion. With an assumed

average height of 24 feet, the volume of the building would be 3,840,000 cubic feet (WCCO Exhibit 72–23; Tr. 2354). The distance from the center of WNYC's proposed antenna array to the penthouse is 1,235 feet (375.2 electrical degrees at 830 kHz) at a bearing of 83.5° (WCCO Exhibit 72–23; Tr. 3863 and 3898). The distance form WNYC's present site to WHS is 12.6 miles at a bearing of 223.1° (WCCO Exhibit 72–23; Tr. 3863).

193. Darwin A. Peterson, one of WCCO's engineering consultants, conducted a field intensity survey on May 12, 1972, for the purpose of determining the incident field intensity at WHS from WNYC's present 1 kW daytime operation (WCCO Exhibit 72–23). Peterson used a Nems-Clarke field intensity meter, Type 120E, Serial No. 1409, last calibrated by Potomac Instruments on January 13, 1971 (WCCO Exhibit 72–23). Field intensity measurements were made of WNYC's present 1 kW operation along the 223.1° radial of WNYC's present antenna site, i.e., in the direction of WHS. WCCO's analysis of these measurements indicated that the incident field at WHS from WNYC's present 1 kW daytime operation is 6.0 mV/m and that the effective ground conductivity along the path of the measurements is 3.8 mmhos/m (WCCO Exhibit 72–23).

194. WCCO's engineering consultants assumed that the conductivity along the path from WNYC's proposed site to WHS would be the same as the conductivity along the path from WNYC's present site to WHS. Based upon a theoretical radiation from WNYC's proposed 50 kW night-time operation and an assumed conductivity of 3.8 mmhos/m, WCCO's engineering consultants calculated the incident field intensity at WHS to be 11.74 volts/m (Tr. 4231, 4282, and 4286). While no study was made as to the effect of the proposed WNYC 50 kW daytime pattern, the WCCO consultants were of the view that WHS would also distort the daytime pattern, as well (Tr. 3857).

195. WCCO's engineering consultants theorized[7] that the field (E_v) in mV/m at one mile that would be radiated by WHS is related to the incident field (E_i) that would be produced by WNYC's proposed 50 kW

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[7] Three theoretical methods were considered in predicting reradiation from WHS. They are:

1. J. W. Crispin, Jr. and A. L. Maffett, "Radar Cross Section Estimation for Simple Shapes," *Proceedings of the IEE*, (August 1965), (WCCO Exhibit 72–23, Part II, Appendix, p. 2; WNYC Exhibit 72–114, p. 1).

2. K. K. Mei and J. G. Van Bladel, "Scattering by Perfectly-Conducting Rectangular Cylinders," *IEE Transactions on Antennas and Propagation*, (March 1963), (WNYC Exhibit 72–115, p. 1; Tr. 3879).

3. John D. Kraus, *Antennas*, (New York, 1950), (WNYC Exhibit 72–115, p. 2; Tr. 3879).

Primary reliance was placed on Crispin and Maffett's method (WNYC Exhibit 72–114, p. 1). The Mei and Van Bladel and the Kraus methods predicted higher reradiation values than did the Crispin and Maffett method. The former methods were used principally to determine whether the Crispin and Maffett predictions were "in the right ball park." (Tr. 3879, 3893, and 3894).

nighttime operation in accordance with a stated formula (WCCO Exhibit 72–23). This produced an E_r value of 152 mV/m at one mile which is predicted for the reradiation that could be expected from WHS as a result of WNYC's proposed 50 kW nighttime operation. Such value exceeds the maximum Expected Operating Values (MEOV's) specified by WNYC for its 50 kW nighttime operation in the sector toward WCCO's present service area (247° true to 310° true). The MEOV's therein range from 50 mV/m to 66 mV/m (WCCO Exhibit 72–23).

196. WCCO planned a subsequent measurement program to determine the reradiation from WHS using WNYC's present 1 kW daytime operation as the source of illumination. WCCO's engineering consultants anticipated that there would also be significant reradiation from the ITFS tower. A radial was established between the ITFS tower and WHS (WCCO Exhibit 72–23).

197. A series of tests were performed which determined that the electrical null of the loop was 88.5° counterclockwise from the plane of the field intensity meter that was used for the measurements. The tests were conducted by using the 820 kHz signal of station WBAP, Ft. Worth, Texas (WCCO Exhibit 72–23).

198. Computations were performed to determine the azimuth bearing toward WNYC's present site from each 100-foot interval along the WHS–ITFS base line. Then the turning angle from the WHS–ITFS base line was determined so as to aim the electrical null of the loop of the field intensity meter toward WNYC's present site. A total of 131 field intensity measurements were then made toward WNYC's present site.

199. When the measurement survey was planned, WCCO's engineers anticipated that the reradiation along the line between WHS and the ITFS tower would be the major factor influencing the measurements and that the effect of other possible reradiators would be small enough to be negligible in the subject area. However, in other areas, WCCO's engineers expected the effect of other possible reradiators to be as great as or greater than the reradiation from WHS and/or the ITFS tower. Early reviews of the data by WCCO engineers indicated that additional sources of signal must be present. Preliminary computer runs were made of various assumed conditions at WHS and the ITFS tower without ever achieving a satisfactory fit to the data. Additional potential sources of reradiation were then considered until there was a total of six such structures under consideration. WCCO's final computer program included procedures for varying the magnitudes and phases associated with the reradiators in order to achieve the best fit and also included all six reradiating sources. In addition, this program had provisions to consider radiation coming directly from WNYC.

200. WCCO's preliminary computer runs were repeated with a variable number of reradiators. The magnitudes and phases which were used as a

starting point for the computer run were judged to give the best results and were used in the final computer program. Nine runs were made, the first including only WHS and the ITFS tower as reradiators and the last including all six as reradiators. The six reradiators and their relationship to WHS are as follows (WCCO Exhibit 72–23):

	Bearing and Distance from WHS	
To	*Azimuth (Degrees)*	*Distance (Miles)*
ITFS Tower	82.7	0.565
FAA Towers	88.1	0.508
Smoke Stacks	236.2	0.545
Fire Department Tower	15.1	1.630
Water Tank	283.7	0.856
WNYC Proposed Site	263.5	0.234
WNYC Existing Site	43.1	12.614

The best curve fit resulted when all six reradiators were included.

201. WCCO's prediction of the field intensities at each point of measurement on each line of measurement was computed based upon an initial estimate of the amplitudes and phases of the reradiated signals at each reradiator. As a measure of "goodness of the fit" between measured and predicted field intensities, the sum of the squares of the difference in magnitude between the predicted and measured values of the field of each measurement point was also computed. The program then symmetrically varied the signals from all of the reradiators considered systematically to achieve the best fit between measurements and prediction (WCCO Exhibit 72–23).

202. WCCO's reradiation estimate for WHS based on the computer program is: reradiation as percentage of incident field—2.48 percent. Using the above reradiation percentage with the incident field of 11,740 mV/m predicted from WNYC's proposed nighttime array, WCCO predicted that the reradiation would be 291 mV/m (2.48 percent of 11,740 mV/m) at one mile. The MEOV's for WNYC's proposed nighttime array range from 50 to 66 mV/m in the sector towards WCCO's present service area from north 247° east to north 310° east. WCCO contends that the reradiated field from WHS is much greater in magnitude than the above MEOV's. Accordingly, WCCO asserts that WHS would distort WNYC's proposed nighttime radiation pattern in such a manner that WNYC's nighttime pattern would exceed its MEOV's in part or in all of the sector toward WCCO's service area (WCCO Exhibit 72–23).

203. WCCO's engineers further stated that because of its proximity to the array and the magnitude of the previously predicted reradiation, WHS would function as a seventh element in WNYC's proposed nighttime array. WCCO made calculations to determine the radiation pattern

of an array consisting of these seven elements. The currents and phases of six of the elements were as specified in WNYC's proposal. The seventh element, WHS, had the current and phase as predicted by the computer anaysis (WCCO Exhibit 72–23).

204. The 0.5 mV/m 50 percent time nighttime sky wave signal of WCCO's existing operation subtends an angle from approximately north 247° east to north 310° east from WNYC's proposed site. The 0.5 mV/m 50 percent time nighttime sky wave signal of WCCO's proposed operation subtends an angle from approximately north 241° east to north 317° east thereof. The computed value of the field within those angles is approximately 300 mV/m or six times the minimum MEOV value of 50 mV/m toward WCCO. A similar situation exists with respect to WCCO's present and proposed nighttime 0.5 mV/m ground wave contour. The 0.5 mV/m nighttime ground wave contour of WCCO's existing operation subtends an angle from approximately north 285° east to north 300° east from WNYC's proposed site. The 0.5 mV/m nighttime ground wave contour of WCCO's proposed operation subtends an angle from approximately north 284° east to north 300° east. The computed value of the field within those angles is 300 mV/m at a bearing of 293° towards Minneapolis or six times greater than the MEOV value of 50 mV/m in that direction (WCCO Exhibit 72–23).

205. Based upon measurement data and the procedures established in WCCO Exhibit 72–3S, WCCO conducted interference studies to determine the effect that WHS would have on WNYC's proposed nighttime array (WCCO Exhibit 72–23).

206. Assuming that WHS would function as a seventh element of WNYC's proposed nighttime antenna array, as WCCO has done, the areas and populations that would receive objectionable interference therefrom would be as follows (WCCO Exhibit 72–23):

Predicted Additional Sky Wave Interference

(0.5 mV/m Ground Wave and 0.5 mV/m 50 Percent Time Sky Wave)

Service Area	*Area*	*Population*
Existing Nighttime Primary Service–0.5 mV/m	62,047	3,346,057
Interference from WNYC 50 kW	0	0
Additional Interference from WNYC 50 kW plus WHS	35,860	645,428
Net Existing Nighttime Primary Service–0.5 mV/m	26,187	2,700,629
Existing Nighttime Secondary Service	1,005,656	21,589,889
Interference from WNYC 50 kW	125,800	7,158,600
Additional Interference from WNYC 50 kW plus WHS	455,443	9,936,413
Total Interference to Existing Secondary Service	581,243	17,095,013
Net Existing Nighttime Secondary Service	424,413	4,494,876

Predicted Additional Sky Wave Interference

(0.5 mV/m Ground Wave and 0.5 mV/m 50 Percent Time Sky Wave)

Service Area	*Area*	*Population*
Proposed Nighttime Primary Service–0.5 mV/m	70,221	3,505,785
Interference from WNYC 50 kW	0	0
Additional Interference from WNYC 50 kW plus WHS	37,975	625,285
Net Proposed Nighttime Primary Service–0.5 mV/m	32,246	2,880,500
Proposed Nighttime Secondary Service	1,185,192	26,172,555
Interference from WNYC 50 mV/m	185,600	9,983,600
Additional Interference from WNYC 50 kW plus WHS	506,089	10,838,200
Total Interference to Proposed Secondary Service	691,689	20,821,800
Net Proposed Nighttime Secondary Service	493,503	5,350,755

207. Ronald Culver, WNYC's consulting engineer, disagrees with WCCO's theoretical and its empirical approach in considering the effect that WHS would have on WNYC's proposed nighttime pattern. Culver states that WCCO's theoretical analysis based on the radar cross-section of the school buildings relies primarily on an article by J. W. Crispin, Jr. and A. L. Maffett. Culver contends that this article was primarily directed to a study of radar echoes and/or backscatter from objects in space, such as aircraft, missiles, and satellites. Culver points out that the abstract of a companion article by the same authors entitled "Radar Cross-Section Estimation for Complex Shapes" states that (WNYC Exhibit 72–114):

> A method for estimating the radar cross section (RCS) of a complex shape, such as an aircraft, a missile, or a satellite can be based on methods already developed for simple shapes.

208. Culver states that Crispin and Maffett did not consider objects or buildings located at ground level, such as WHS, in their studies of radar cross-section (WNYC Exhibit 72–115).

209. The abstract to the Crispin and Maffett article which WCCO relies on states in part as follows (WNYC Exhibit 72–114):

> The discussion is limited to perfectly conducting bodies: in particular, ellipsoids, finite cones, ogives, cylinders, thin wires, wire loops and flag plates.

The introduction to this article also states:

> We shall restrict our attention here to those bodies which are perfect conductors.

210. Culver states that Crispin and Maffett's assumption of perfect conductivity was a reasonable one for aircraft, missiles, and satellites, which have a metallic skin. However, Culver indicated that Crispin and

Maffett's assumption is unreasonable for WHS, a major portion of which is made up of nonconducting materials, such as concrete, brick, mortar, glass, wood, and plaster. Only a minor portion of WHS is made up of conducting materials, such as structural steel, wiring conduit, pipe, window frame, and other metallic objects (WNYC Exhibit 72–114).

211. Culver stated that application of Crispin and Maffett's procedures for determining the radar cross section of bodies which are perfect conductors means that all the electromagnetic energy which impinges on the body is absorbed and reradiated or reflected without loss or attenuation. Culver also stated that only a portion of the impinging energy is absorbed and only a portion of the absorbed energy is reradiated with imperfect conductors such as WHS. Moreover, Culver stated that radar reflectivity and the Crispin and Maffett articles consider only objects located in space (WNYC Exhibit 72–114).

212. According to Culver, by employing the theoretical method based on radar reflectivity, as was done by WCCO's engineers, fictitious values of reradiated power and field are obtained since such values are based on false assumptions that the Wagner High School building complex (having a volume of 3,800,000 cubic feet) is a perfectly conducting body and that it is located on a perfectly conducting plane surface. Those values for 830 kHz employing the MEOV's for the proposed WNYC nighttime operation are: (1) reradiated power, 1,952 watts, and (2) reradiated field, 152 mV/m at one mile. Culver states that these values represent maximum values which could occur only if WHS was a perfectly conducting body of simple shape and was located on a perfectly conducting earth. The actual values, Culver states, will be much less than the values calculated by WCCO because of the dielectric losses in the materials surrounding or located adjacent to the conducting members of the school buildings, the I^2R losses in the conducting members themselves, and ground losses (WNYC Exhibit 72–114).

213. WCCO's engineers referred to an article by K.K. Mei and J.G. Van Bladel as another theoretical approach. The Mei and Bladel approach also assumes perfectly conducting bodies, this time rectangular cylinders. However, Culver stated that WHS is not a rectangular cylinder nor a conducting body and that, therefore, no valid determinations of scattering or reradiation of WNYC's proposed signal can be made on the basis of Mei and Bladel (WNYC Exhibit 72–115).

214. WCCO's engineers referred to a third theoretical approach based on John D. Kraus' method. Kraus is a well recognized authority on antennas (WNYC Exhibit 72–115).

215. Kraus' method deals only with apertures of antennas, including the scattering aperture of a parasitic antenna reradiating the power received from a nearby transmitting antenna. His method does not consider or

provide information concerning apertures for other objects, such as WHS (WNYC Exhibit 72–115).

216. In order to apply Kraus' methods to WHS, Culver states that an assumption has to be made that the school can be considered as a short vertical radiator at 830 kHz. However, Culver states that this would not be a valid assumption (WNYC Exhibit 72–115).

217. Culver notes that WCCO's engineers, in referring to their computer program, stated that a one over distance squared factor ($1/d^2$) was added to take care of proximity. Culver states that such factor had to apply to the induction field which exists close to a radiator and which decays at a rate inversely proportional to the square of the distance from the radiator ($1/d^2$) (WNYC Exhibit 72–115).

218. Culver contends that the above factor does not take into account the fact that an antenna array is not a point source of radiation. Culver states that accurate measurements to establish the inverse field at one mile can only be obtained at locations far enough removed so that the distances to all elements of the array are essentially equal (WNYC Exhibit 72–115).

219. Culver stated that the assumption of WHS as a seventh element in WNYC's proposed directional array is invalid. The radiation efficiency of antennas of heights from approximately 10 to 100 degrees employing widely varying systems was investigated by G.H. Brown, R.F. Lewis, and J. Epstein of the RCA Manufacturing Company, Inc. The results of that investigation were reported in a paper published in the Proceedings of the Institute of Radio Engineers of June 1937. The minimum ground system considered by Brown, Lewis, and Epstein consisted of two radials. Culver stated that WHS (Tower 7) has no radial ground system. However, Culver also states that the results of the above investigation indicates that the radiation for Tower 7, with a height of 17.1° and a minimum of 2 ground radials would be 44 mV/m at one mile for a power input of 1 kW. According to Culver, in order to produce a radiation of 280 mV/m (0.279×1004) for Tower 7, as used by WCCO, the power input to Tower 7 would have to be $(280/44)^2 \times 1.0$ or 40.5 kW which he considers to be unrealistic and lacking in probative value (WNYC Exhibit 72–115).

220. In WCCO's computer program, only one reradiator was assumed for the two FAA towers and only one reradiator was assumed for the two Seaview smoke stacks. In addition, only one reradiator was assumed for WHS which has a N-S dimension of approximately 400 feet (121.6° at 830 kHz) and an E-W dimension of aproximately 500 feet (152° at 830 kHz). Culver stated that these assumptions are invalid and lead to erroneous results since the reradiation from a group of reradiators, such as the two FAA towers, the two smoke stacks, and the numerous vertical steel columns of WHS, will not be the same as that from single element, nondirectional reradiators (WNYC Exhibit 72–114).

221. Culver stated that the FAA towers, Seaview stacks, and WHS are really directional reradiators made up of two or more elements and must be treated as such to obtain reliable results. This is true since WCCO's computer program assumes that each of the values measured at the 131 measurement points is the resultant of the actual effective fields at one mile from six non-directional reradiators. That assumption, Culver stated, completely disregards the fact that WHS, the FAA towers, and Seaview stacks are multiple element reradiators. Culver also stated that such assumption disregards the effects of proximity on the values determined by measurements at locations close to WHS, the ITFS tower, and the FAA towers. Culver further stated that WCCO's assumption, that the measured values are the resultant of the effective (unattenuated) fields at one mile from the reradiators, disregards the attention of the reradiated signals in traveling from the six reradiators considered to each of 131 measuring points (WNYC Exhibit 72–114).

222. Culver stated that WCCO's measured values do not directly reflect the effective fields at one mile of six non-directional reradiators as assumed in WCCO's computer analysis, but instead reflect fields as modified: (1) by the fact that three of the radiators are directional rather than non-directional; (2) by proximity to one or more of the assumed reradiators; and (3) by attenuation of the signals along the paths from each reradiator to each measuring point (WNYC Exhibit 72–114).

223. Culver contends that measurements of field strength made in close proximity of an antenna may vary widely in actual values from the values which would be expected or computed from employing an effective field at one mile from the antenna. He noted that Section 73.186 of the Commission's Rules states that measurements to determine the effective field at one mile from an antenna should start not less than one wavelength or 5 times the vertical height from a non-directional antenna or 10 times the spacing between the elements of a directional antenna. A wavelength at 830 kHz is 1185.1 feet. Five times the vertical height of the ITFS tower is 1536 feet. Ten times the spacing between the FAA towers is 1100 feet. Ten times the spacing between the vertical structural steel columns of the WHS is 4000 to 5000 feet. Ten times the spacing between the verticla steel columns of the tall portion of WHS, in which WCCO shows 830 kHz radio frequency currents, is 1600 feet (WNYC Exhibit 72–114).

224. Culver stated that the computations employing the measurements to determine the reradiation from WHS must consider the directional characteristics of three of the reradiators as well as the attenuation along the paths from each reradiator to each measuring point to be meaningful. In addition, Culver stated that the proximity effects on all the measurements made within 1535 feet of the ITFS tower, 1100 feet of the FAA towers, and 1600 feet of WHS (assuming that all the reradiation comes from the taller portion of that school), must also be considered. According

to Culver, an examination of WCCO's measurements show that all of the measurement points fall short of the minimum distance requirement for most of the subject structures considered to be reradiation sources (WNYC Exhibit 72–114).

225. Culver contends that the maximum reradiated power which could occur from WHS, assuming it is a perfectly conducting body located on a perfectly conducting earth is 1952 watts. Even though the actual reradiated power would be much less states Culver, it is assumed that this maximum value of 1952 watts will be available to produce the predicted reradiation for WHS of 291 mV/m at one mile as determined by WCCO. Figure 8, of Section 73.190 of the Commission's Rules, shows that the height of the non-directional reradiator assumed for WHS would have to be 441 feet. To produce an effective field of 291 mV/m at one mile with a power of 1952 watts, Figure 8 indicates that such assumed reradiator would have to have a ground system consisting of a minimum of 120 copper ground radials each having a length of 296 feet (WNYC Exhibit 72–114).

226. It is Culver's opinion that the value of reradiation determined for WHS employing the measurements and computer analysis is completely unrealistic since (1) the school has a maximum height of only 70 feet, (2) it is not a non-directional reradiator, (3) it does not have a ground system, and (4) the actual radiated power will be substantially less than 1952 watts (WNYC Exhibit 72–114).

227. The assumption has been made by WCCO that WHS would be a seventh radiating element in WNYC's proposed six element directional array. According to Culver, the reradiation calculations based thereon, are unreasonably high. Moreover, although the calculations are limited to the horizontal plane, vertical plane radiations are pertinent with respect to predicting increased interference to WCCO's existing and proposed nighttime coverage from WNYC's assumed operation with the seventh element array (WNYC Exhibit 72–114).

228. *Capital Cities Broadcasting Corp., Radio Station WPAT*, 20 FCC 2d 768 (1969) involved the possible increase in interference to WBEN due to the reradiation of signals from WPAT's four element directional array by an 18-story apartment building with a height of 180 feet located in the maximum lobe of radiation of such array. Specifically, in the *Capital Cities* proceeding, WCCO's consulting engineers considered the 18-story building as an additional element in WPAT's directional array with a resultant increase in interference to WBEN, a co-channel operation (WNYC Exhibit 72–114).

229. However, considering the above 18-story building as an additional element in WPAT's directional array was rejected as indicated in the last two sentences of Paragraph 6, page 770 of *Capital Cities Broadcasting Corp., supra*, where the Commission stated that (WNYC Exhibit 72–114):

Each vertical member of the steel frame of the building reradiates energy. To postulate a structure of these dimensions as a fifth element in the array of synthesized radiation patterns as WBEN had done, violates the theoretical precept of point sources of radiation upon which computation of pattern shapes is based.

230. Culver stated that there is a very good agreement between the pattern shapes and parameters of the calculated theoretical patterns of January 1965, for the WPAT four element array (File BP–16516) and the measured proof patterns for that array of October 1967, (File BL–11299) indicating that there was no significant reradiation of WPAT's signals from the nearby apartment building. Culver states that the same situation will hold for WHS and WNYC's proposed array (WNYC Exhibit 72–114).

Conclusions on Issue 8

231. From the foregoing findings, it is concluded that except possibly as to Wagner High School, none of the potential reradiators at the proposed antenna site are likely to cause a serious problem, and that to the extent they do, they can be detuned, a fact conceded by WCCO's engineers. As to Wagner High School, however, a more complex situation is involved.

232. The WCCO engineering consultant contends Wagner High School (WHS) will be the source of substantial reradiation, based on studies of actual measurements of WNYC's present operation and theoretical considerations applied to a computer model. The theories on which this study is predicated is not, however, well established and are challenged by the WNYC engineering consultant. In the light of this divergence of opinion it cannot be found that the proposed WNYC 50 kW transmitter site would be unsatisfactory, or that it would unduly distort the proposed antenna radiation pattern.

Issue 9

To determine whether the City of New York Municipal Broadcasting System will be able to adjust and maintain the 50 kW directional antenna system as proposed in the instant application.

233. WNYC proposes to operate directionally with a power of 50 kW and with different daytime and presunrise and postsunset (nighttime herein) radiation patterns (WNYC Exhibit 72–101).

234. In designing the proposed antenna array, WNYC considered such things as (1) the site that would be used, (2) the service that would be provided to New York City, (3) the protection that would be afforded to existing stations and to WCCO's proposed operation, and (4) the inherent stability of the proposed radiation patterns. With respect to protecting existing stations, Ronald Culver, WNYC's consulting engineer, testified that WNYC's proposed 50 kW nighttime operation would not exceed the

interference to WCCO which is presently caused by WNYC's 1 kW SSA operation (WNYC Exhibit 72–107).

Description of Directional Antenna System Tower/Details and Arrangement

235. WNYC's proposed directional antenna system employs six guyed, triangular, structural steel towers of uniform cross section. Each tower is 330 feet (100.1 electrical degrees) in height and rests on an insulator and will have an overall height above ground of 341 feet. The towers are symmetrically disposed in the form of a parallelogram on a line bearing 280° true. The north side of the line contains three towers spaced at intervals of 329.3 feet (100 electrical degrees). The south side contains three towers, also spaced at intervals of 329.3 feet (100 electrical degrees). The north and south line of towers are so disposed with respect to each other that corresponding towers are on a line bearing 240° and separated, along such bearing line, by a distance of 658.6 feet (200 electrical degrees) (WNYC Exhibit 72–107).

236. The tower guy cables will be broken up with insulators every 75 feet with the first insulator positioned at the ground anchor end of the guy. At its upper end, each guy will terminate at an insulator in the form of an 8-foot length of fiberglass, which serves as the guy attachment to the tower. The fiberglass insulation will tend to eliminate the possibility that environmental variables such as temperature and humidity would sufficiently affect the electrical characteristics of the individual 75-foot guy sections so as to alter significantly the operating characteristics of the towers as radiators of energy at 830 kHz. The individual tower sections will be welded where they are joined to each other so that each tower will have a continuous and uniform electrical circuit throughout its height (WNYC Exhibit 72–107).

237. The base of each tower and its insulator will be elevated approximately 8 feet above ground level in order to eliminate the effects that changes in nearby ground conditions might have on the operating characteristics of the radiators. Ring-type air dielectric (Austin) transformers will be employed at the base of each tower to provide power to the tower lights (WNYC Exhibit 72–107).

Ground System

238. The ground portion of WNYC's proposed 50 kW directional antenna array will have a 40-foot square, copper ground screen centered at the base of each tower. One hundred and twenty uniformly spaced buried copper wires approximately 300 feet (90 electrical degrees) in length except where they intersect between towers will be bonded to each ground screen and will extend radially therefrom. Such radials will be

terminated and bonded together where they intersect. An additional 120 buried radials 50 feet in length will be interspersed between each of the longer sets of 120 radials (WNYC Exhibit 72–107).

239. The ground system will include a heavy bus (bonding strap) which connects the towers, tuning houses, and transmitter house and will serve as the connection between the ground radials where they intersect between towers. All joints in the ground system, radials, screens, and copper bus will be brazed so that they will be mechanically strong and not subject to change with time. All metallic objects such as the ground connections on the phasing and coupling equipment and enclosures, the tower supports and anchors, the transmitter, electrical conduits, and water pipes located within the ground system or adjacent thereto will be securely bonded to the ground system.

Transmission and Sampling Lines

240. The coaxial transmission lines located at the base of the tower radiators, through which power is fed from the transmitter to the antenna tuning units, will be 1⅝" phase stablized lines employing copper inner and outer conductors with foamed dielectric serving as insulation between the conductors. The coaxial lines will be covered with a weatherproof neoprene jacket so as to permit burial in the ground below frost level. Such burial will insure maintenance of a reasonably constant transmission line temperature and will, therefore, minimize day-to-day temperature induced changes in the impedance and phase characteristics of the lines. The ⅜" coaxial transmission lines used to feed the sample currents from the tower radiators to the phase monitor in the transmitter house will all be of equal length. As with the coaxial power transmission lines, *supra*, these sampling lines will be phase stablized, will employ the same copper conductor and foamed dielectric insulation construction, will have the same protective jacketing, and will be temperature stablized insofar as day-to-day variations are concerned through burial in the ground below the frost level (WNYC Exhibit 72–107).

241. Electrostatically shielded pickup loops (used to provide sample currents to the phase monitor) will be coupled to the antenna leads near the base of each tower. These sampling loops will be suitably mounted within the tuning houses, so that protection is afforded from the weather.

242. The power, communications, and control circuits running from the transmitter house to the base of each tower will be buried in the ground in order to avoid any possible undesirable effects that they might have on the operation of the directional antenna system.

Phasing and Coupling Equipment

243. The phasing and coupling equipment for WNYC's proposed directional antenna system will employ vacuum capacitors throughout. Such

vacuum capacitors contribute to the pattern stability of directional operations since they are relatively unaffected by environmental changes such as temperature and humidity variations. The inductors and the connecting leads used in the phasing and coupling equipment will employ large silver plated copper conductors in order to reduce power loss through heating of the conductors. As a result, the phasing and coupling equipment will maintain their characteristics under normal operating conditions (WNYC Exhibit 72–107).

Monitoring Equipment

244. The base current and common point current meters proposed to be used in WNYC's 50 kW directional antenna system will be calibrated by an independent meter laboratory prior to installation to establish their accuracy. The phase monitor, a Potomac Instruments Type PM-19 having an accuracy of ± 0.1° in phase and ± 0.1% in current ratio, will be installed and will be employed for the initial adjustment and for the day-to-day monitoring of WNYC's directional radiation patterns to insure that proper operation is obtained and maintained (WNYC Exhibit 72–107).

Operating Resistances

245. WNYC states that the operating resistances of the radiators of a directional antenna system are pertinent factors which must be considered in the design of such systems. If the operating resistance of each of the towers of any array has a reasonably high value, a stable operation will normally result since the antenna system will not then be materially affected by the normally small day-to-day changes which occur as a result of environmental changes such as temperature and humidity variations (WNYC Exhibit 72–107).

246. The operating resistances of the radiators of WNYC's proposed directional antenna system, particularly those that would ensue for the nighttime directional pattern were given serious consideration by WNYC before the final designs were established. These resistances were a major consideration in arriving at the final arrangement of the radiators both as to placement and as to height. The operating resistances for both WNYC's proposed 50 kW daytime and nighttime operations are as follows (WNYC Exhibit 72–107):

	Calculated Operating Resistance[8]	
Tower	*Daytime*	*Nighttime*
1	21.8 ohms	242.3 ohms
2	−105.9	65.3
3	31.2	8.9

[8] Calculated directional operating resistances referred to the current loop employing a self-resistance of 49 ohms and a loss resistance of 1 ohm.

Tower	*Calculated Operating Resistance*[a] *Daytime*	*Nighttime*
4	41.8	7.9
5	−195.1	40.0
6	33.2	100.9

247. Operating so as to produce WNYC's proposed 50 kW daytime radiation pattern, the minimum positive and negative tower resistances, referred to the current loop, are calculated to be 21.8 ohms and 105.9 ohms, respectively, which correspond to theoretical operation base resistances of approximately 22.5 ohms and -109 ohms. WNYC estimates that the actual operating resistances for the daytime pattern will run approximately 10 ohms higher for the positive resistances and approximately 10 ohms lower for the negative resistances, as shown above.

248. Operating so as to produce WNYC's proposed 50 kW nighttime radiation pattern, the minimum tower resistance is 7.9 ohms, referred to the current loop. That resistance corresponds to the theoretical operating base resistance of a radiator of infinitesimally thin cross section and cannot be realized in practice. With the normal guyed towers which serve as radiators, the actual operating resistances are always higher than the calculated operating resistances. WNYC estimates that the actual operating resistances for the nighttime radiation pattern will run approximately 10 ohms higher than those shown above (WNYC Exhibit 72–107).

249. With the actual minimum values of operating resistance the operating resistances will be sufficiently high to avoid creation of a problem with respect to attaining and maintaining WNYC's proposed 50 kW nighttime radiation patterns (WNYC Exhibit 72–107).

Proposed Radiation Patterns

250. *Daytime:* WNYC's proposed 50 kW daytime radiation pattern has three substantial lobes projected toward the east, the southwest, and the north-northeast. Suppression of radiation occurs toward the northeast, southeast, and west. The latter is the deepest of the three nulls (WNYC Exhibit 72–101; Tr. 2287). The parameters for the daytime radiation pattern are (WNYC Exhibit 72–107):

Tower	*Current Ratio*	*Phase (degrees)*
#1 (NE)	1.000	0
#2 (N)	0.270	129
#3 (NW)	0.743	−35
#4 (SW)	0.409	−55
#5 (S)	0.149	109
#6 (SE)	0.550	−20

The RMS of the proposed daytime pattern is 1263 mV/m (WNYC Exhibit 72–101). The most critical bearings for the entire pattern are within the arc from 250° to 310° true (WNYC Exhibit 72–107; Tr. 2369). The theoretical values of radiation and the MEOV's in the horizontal plane, in the critical directions, are as follows (WNYC Exhibit 72–101 and 72–107):

Azimuth (°T)	*Theoretical Value (mV/m)*	*MEOV (mV/m)*
250	945	1200
255	664	863
260	441	588
265	286	350
270	202	240
275	163	182
280	139	153
285	117	132
290	106	120
295	115	127
300	146	175
305	205	255
310	298	362

251. *Nighttime Radiation Pattern:* WNYC's proposed 50 kW nighttime pattern has one major lobe projected toward the east-northeast and a minor lobe directed generally toward the southeast. Suppression of radiation occurs toward the east-southeast, but the deepest null is directed toward the west (WNYC Exhibit 72–101; Tr. 2287). The parameters for the nighttime pattern are (WNYC Exhibit 72–107):

Tower	*Current Ratio*	*Phase (degrees)*
#1 (NE)	0.205	−108
#2 (N)	0.500	−20
#3 (NW)	0.310	68
#4 (SW)	0.620	88
#5 (S)	1.000	0
#6 (SE)	0.410	−88

The RMS of the proposed pattern is 1358 mV/m (WNYC Exhibit 72–101). The most critical bearings for the entire pattern are within the arc from 250° to 310° true (WNYC Exhibit 72–101 and 72–107; Tr. 2369). The theoretical values of radiation and the MEOV's in the critical directions and pertinent vertical angles are as follows (WNYC Exhibit 72–101 and 72–107):

Azimuth (°T)	*Vertical Angle (°)*	*Theoretical Value (mV/m)*	*MEOV (mV/m)*
250	0	49.8	57.5
	5	50.0	57.0
	10	50.7	58.0
	15	52.7	60.5
260	0	47.1	54.0
	5	46.7	54.0
	10	45.6	53.0
	15	44.4	52.0
270	0	48.2	54.0
	5	47.3	53.5
	10	45.1	51.5
	15	42.3	50.0
280	0	44.1	51.0
	5	43.2	50.0
	10	40.9	50.0
	15	38.0	50.0
290	0	33.6	50.0
	5	33.1	50.0
	10	31.9	50.0
	15	30.4	50.0
300	0	23.8	50.0
	5	23.7	50.0
	10	23.6	50.0
	15	23.7	50.0
310	0	20.1	50.0
	5	20.3	50.0
	10	21.1	50.0
	15	22.7	50.0

Stability of Radiation Patterns

252. A directional antenna system will exhibit variations in the radiated fields in day-to-day operation due to small variations in the operating parameters resulting from the effects of changing temperature, humidity, etc., on the radiators, ground system, phasing and coupling equipment, and other components making up the system (WNYC Exhibit 72–107). In an attempt to determine what effect variations of the operating parameters would have on the radiated fields, WNYC's consulting engineer conducted two such studies of parameter variations, each based on a different method of mathematical analysis.

Radiation Pattern Stability Study

253. *Method I—(Worst Case):* WNYC's consulting engineer had calculations made to establish the maximum effect (worst case) upon the radiated fields when the operating parameters were varied ± 1% in magnitude and ± 1° in phase from their proposed values with respect to

the reference tower (Tower No. 1 for daytime and Tower No. 5 for nighttime operation) for the six towers making up the daytime and nighttime directional system proposed for WNYC's 50 kW operation. Such a variation study of six tower array involves 59,049 discrete combinations of amplitudes and phases in each direction which have to be considered in seeking out the "worst case" condition. The same number of combinations applies to the daytime and nighttime arrays (WNYC Exhibit 72–107).

254. In view of the large number of combinations which had to be investigated for each direction in azimuth for the proposed daytime array and for each direction in both azimuth and elevation for the proposed nighttime array, the calculations were carried out by a computer. The computer was instructed to carry out the calculations for every 10° in azimuth and an elevation of 0° (horizontal plane) for WNYC's proposed daytime operation (a total of 2,125,764 calculations). For WNYC's proposed nighttime operation, the computer was instructed to carry out the calculations for every 10° in azimuth and at 0°, 5°, 10°, and 15° angles of elevation (a total of 8,503,056 calculations) (WNYC Exhibit 72–107). The results of this determination of worst case conditions in those directions which are considered to be critical are as follows (WNYC Exhibit 72–107):

		Maximum Value of Radiation (mV/m)	
Azimuth (°T)	*Angle (°)*	*Daytime*	*Nighttime***
250	0	1004	106.5
	5	—	106.7
	10	—	107.2
	15	—	108.0
260	0	502	98.0
	5	—	96.4
	10	—	87.8
	15	—	90.4
270	0	256*	102.4
	5	—	101.0
	10	—	97.0
	15	—	89.8
280	0	196*	93.4
	5	—	96.9
	10	—	94.8
	15	—	91.2
290	0	158*	92.1
	5	—	91.5
	10	—	89.6
	15	—	86.4
300	0	204*	79.6
	5	—	79.0
	10	—	77.2
	15	—	74.1

Azimuth (°T)	Angle (°)	Maximum Value of Radiation (mV/m) Daytime	Nighttime* *
310	0	360	68.5
	5	—	67.7
	10	—	65.4
	15	—	73.4

*Exceeds the MEOV.
**All nighttime maximum values exceed the MEOV.

255. Since it was established that operating parameter variations of ±1% in magnitude and ±1° in phase would produce radiations in excess of the MEOV's within the arc of critical bearings, both daytime and nighttime, a further "worst case" stability study was undertaken. This time a reverse approach was used. Instead of establishing the radiated field that would result from a specific combination of parameter variations, this further study undertook to establish the maximum parameter variations that could be permitted and yet contain the radiated fields within the constraints of the proposed MEOV's in the critical directions. The further study showed that the proposed daytime MEOV's in the critical directions would not be exceeded if the operating parameter excursions from the proposed values were held within ±0.2% in magnitude and ±0.2° in phase. The nighttime MEOV's in the critical directions would not be exceeded if the operating parameters were maintained within ±0.16% magnitude and ±0.16° in phase (WNYC Exhibit 72–107; Tr. 2305). The maximum values of radiation in the critical directions that would occur with the tolerances noted are as follows (WNYC Exhibit 72–107):

Azimuth (°T)	*Vertical*	*Maximum Value of Radiation (mV/m)* *Daytime*	*Nighttime***
250	0	957	56.0
	5	—	56.2
	10	—	57.1
	15	—	59.0
260	0	453	51.8
	5	—	51.2
	10	—	49.6
	15	—	48.8
270	0	212	53.9
	5	—	52.9
	10	—	50.3
	15	—	47.4
280	0	150	49.4
	5	—	48.6
	10	—	46.5
	15	—	43.8
290	0	117	40.1

Azimuth (°T)	*Vertical*	*Maximum Value of Radiation (mV/m)* *Daytime*	*Nighttime***
	5	—	39.7
	10	—	38.5
	15	—	36.9
300	0	158	30.2
	5	—	30.0
	10	—	29.7
	15	—	29.5
310	0	310	24.8
	5	—	25.0
	10	—	25.7
	15	—	27.5

256. *Method II-Statistical:* In view of the large number of combinations of parameter variations involved in a stability study, WNYC's consulting engineer believes that even in the unlikely event that a "worst case" condition would ever occur, its duration would be for an insignificant period of time. Further, in his opinion, the "worst case" method is not a realistic approach to evaluating actual field intensity variations that would occur in the day-to-day operation of WNYC's proposed 50 kW operation. In his opinion, the evaluation of the actual field intensity variations which may be expected to occur and an evaluation of the stability of WNYC's proposed radiation pattern is best accomplished by using a statistical method (WNYC Exhibit 72–107).

257. The statistical method[9] employed by WNYC involves the vector summation of a randomly varying Rayleigh error field and constant vector, i.e., that' vector representing the theoretical field calculated for a particular direction from the theoretical operating parameters. This method forms the basis of the computer program used by WNYC to indicate the effect that operating parameter variations would have on the radiated fields of WNYC's proposed operation (WNYC Exhibit 72–107). On the assumption that the Rayleigh distributed error vector was established by operating parameter variations of ±5.24% in magnitude and ±3° in phase and that the radiation patterns were adjusted to the theoretical values, the following resultant radiated fields in the critical directions were indicated (WNYC Exhibit 72–107):

[9] Described in an article by K. A. Norton, L. E. Vogler, W. V. Mansfield, and P. L. Short on "The Probability Distribution of the Amplitude of a Constant Vector Plus a Rayleigh-Distributed Vector," *Proceedings of the Institute of Radio Engineers*, Vol. 43, No. 10 (October 1955) 1354—1361 (WNYC Exhibit 72–107).

Azimuth (°T)	*Elevation Angle (°)*	*Resultant Field (mV/m)* Day	Night
250	0	—	55.1
	5	—	55.2
	10	—	55.7
	15	—	57.2
260	0	—	52.6
	5	—	52.3
	10	—	54.1
	15	—	59.7
270	0	—	53.7
	5	—	52.8
	10	—	50.7
	15	—	47.9
280	0	143.3	50.1
	5	—	49.2
	10	—	47.0
	15	—	44.2
290	0	112.0	41.4
	5	—	40.9
	10	—	39.7
	15	—	38.1
300	0	150.6	34.7
	5	—	34.5
	10	—	34.1
	15	—	33.6
310	0	—	32.5
	5	—	32.5
	10	—	32.6
	15	—	32.9

258. According to WNYC, it is normally impossible to adjust a directional antenna system exactly to the calculated or the theoretical value of radiation. Moreover, to achieve the most stable day-to-day operation, the pattern should be adjusted to the highest possible values of radiation consistent with providing the required protection. Accordingly, WNYC undertook to determine the maximum permissible adjustment fields which, if obtained, would produce resultant fields that would not exceed the proposed MEOV's after applying the concept of the randomly varying Rayleigh error vector. The results of these studies are as follows (WNYC Exhibit 72–107):

	Azimuth	*Adjustment Value (mV/m)* ±3° & ±5.24%	±2° & ±3.49%	±1° & ±1.75%
Day:	285	127	129	131
	290	114	117	119

		Adjustment Value (mV/m)		
	Azimuth	*±3° & ±5.24%*	*±2° & ±3.49%*	*±1° & ±1.75%*
	295	121	124	126
Night:	255 to 270	48.5	51	53
	285 to 310	44	47	49

Pattern Adjustment and Maintenance

259. Culver stated that WNYC's proposed daytime directional pattern can be adjusted to produce a radiation of 119 mV/m or less and that the proposed nighttime directional pattern can be adjusted to produce a radiation of 49 mV/m or less in the critical directions shown at the table above. These are the directions in which WNYC's proposed MEOV's have their lowest value (WNYC Exhibit 72–107). With the foregoing radiation adjustments, it is Culver's opinion that, in normal day-to-day operation, WNYC's proposed daytime and nighttime radiation patterns can be maintained within the required limits of phase and amplitude variations with the phasing and coupling equipment and the phase monitor and sampling system proposed to be used by the applicant. With respect to the inherent stability of the proposed directional patterns, WNYC states that the ratio of the R.S.S. to the R.M.S. is an important guidelines. WNYC supports this statement by referring to a report issued by the Federal Communications Commission, Office of the Chief Engineer, Technical Research Division,[10] which states that:

> It should be pointed out that for the more unstable arrays, the R.S.S. field of the antenna system may be three or four times as large as the R.M.S. field. . . .
>
> and
>
> A good antenna system design will require a low ratio of R.S.S. to R.M.S. to yield stable nulls.

In view of the foregoing, due consideration was given to the R.S.S. to R.M.S. ratio and the proposed systems have daytime and nighttime R.S.S. to R.M.S. ratios of 1.75 to 1 and 1.07 to 1, respectively (WNYC Exhibit 72–107).

Conclusions on Issue 9

260. In view of the findings, the proposed physical design of WNYC's antenna and ground system, the transmission and sampling lines, and the

[10] H. Fine, "Physical Limitation to Directional Antenna Systems in the Standard Broadcast Band," *T.R.R. Report 1.2.6*, (October 8, 1952) (WNYC Exhibit 72–107).

phasing and coupling equipment, is such as to maximize pattern stability insofar as it would be affected by changing environmental conditions.

261. The radiated fields of a directional system will tend to vary in day-to-day operations as a result of environmental changes such as temperature and humidity. This radiated field variation occurs when the aforementioned environmental changes alter the characteristics of the radiators, the ground system, the phasing and coupling equipment, and other components of the complete system. These components in turn affect the operating parameters.

262. The "worst case" studies performed by WNYC establish the greatest increase of the radiated fields that could occur when the operating parameters were varied ±1% in magnitude and ±1° in phase from their proposed values, with respect to the reference tower (Tower No. 1 for daytime and Tower No. 5 for nighttime) for the six towers making up the daytime and nighttime directional system proposed for WNYC's 50 kW operation. Such a variation study of six tower array involves 59,049 discrete combinations of amplitudes and phases in each direction which have to be considered to determine the "worst case" condition. The above number of combinations applies to both the daytime and nighttime arrays.

263. It was concluded from this study that operating parameter variations of ±1% in magnitude and ±1% in phase would produce radiations in excess of the predicted MEOV's within the arc of critical bearings both daytime and nighttime.

264. In view of the foregoing, a further "worst case" stability study was undertaken. This time a reverse approach was used. This further study established that the proposed daytime MEOV's in the critical directions would not be exceeded if the operating parameter excursions from the proposed values were held within ±0.2% in magnitude and ±0.2° in phase. This study also established that the nighttime MEOV's, in the critical directions, would not be exceeded if the operating parameters were maintained within ±0.16% in magnitude and ±0.16° in phase.

265. *Method II—Statistical*: In view of the large number of combinations of parameter variations involved in a stability study, WNYC believes that there is small probability that a "worst case" condition would actually occur and at the most such occurrence would be for an insignificant period of time. Further, WNYC is of the opinion that a "worst case" method is not a realistic approach to evaluating actual field intensity variations that would occur in the day-to-day operation of WNYC's proposed 50 kW operation. It is WNYC's opinion that the evaluation of the actual field intensity variations which may be expected to occur and an evaluation of the stability of WNYC's proposed radiation patterns is best accomplished by using a statistical method. The Broadcast Bureau con-

cludes that this opinion is sound, provided safeguards noted below, are utilized.

266. The statistical method employed by WNYC involves the vector summation of a randomly varying Rayleigh error field and constant vector, namely that vector representing the theoretical field calculated for a particular direction from the theoretical operating parameters. This method forms the basis of the computer program used by WNYC to indicate the effect that operating parameter variations would have on radiated fields of WNYC's proposed operation. On the assumption that the Rayleigh distributed error vector was established by operating parameter variations of ±5.25% in magnitude and ±3° in phase and that radiation patterns were adjusted to the theoretical values, the resultant radiated fields in the critical directions would not exceed the predicted MEOV's within the arc of critical bearings either daytime or nighttime.

267. According to WNYC, it is normally impossible to adjust a directional antenna system exactly to the calculated or the theoretical value of radiation. Moreover, to achieve the most stable day-to-day operation, the pattern should be adjusted to the highest possible values of radiation consistent with providing the required protection. In view of this, WNYC undertook to determine the maximum permissible adjustment fields which, if obtained, would produce resultant fields that would not exceed the proposed MEOV's after applying the concept of the randomly varying Rayleigh error vector.

268. In view of all of the foregoing, it is concluded that WNYC's proposed 50 kW daytime and nighttime pattern can be maintained within the proposed MEOV's, but only if the operating parameters are maintained within close tolerances. Consequently, in the event of a grant, the following conditions should be made a part of the construction permit:

Condition No. 1:

An antenna monitor of sufficient accuracy and repeatability, and having a minimum resolution of 0.1° phase and 0.1% sample current ratio deviation shall be installed and continuously available to indicate the relative phase and magnitude of the sample currents of each element in the array to insure maintenance of the radiated fields within the maximum authorized expected operating values of radiation.

Condition No. 2:

Upon receipt of operating specifications and before issuance of a license, permittee shall submit the results of observations made daily of the base currents and their ratios, relative phases, sample currents and their ratios, and sample current ratio deviations for each element of the array along with the final amplifier plate voltage and current, the common point current, and the field intensities at each monitoring point for both the nondirectional and directional operations for a period of at least thirty days, to demonstrate that the array can be maintained within the specified tolerances.

269. While WCCO contests the conclusions of both WNYC and the Broadcast Bureau, WCCO in its reply brief, does not comment on or question these two conditions.

Issue 10

To determine the type and character of the program service proposed to be rendered by station WNYC and whether and to what extent WNYC's daytime and nighttime proposed programming would serve special needs and requirements of the populations and areas proposed to be served.

Program Service in General

270. The program service of WNYC is noncommercial completely devoted to public service. Its programming and services are not controlled, dictated, or affected by commercial or network interests.

271. As a noncommercial, municipal broadcasting service, WNYC is required by the Charter of the City of New York to (1) serve as an adjunct to any government agency which shall require such service; (2) to broacast for the instruction, enlightenment, entertainment, recreation, and welfare of the inhabitants of the city by the broadcast of any matters which are deemed appropriate and necessary for the public interest and advantage; and (3) to connect such facilities with any broadcasting station or stations so as to unite in the broadcasting of such matters (WNYC Exhibit 72–2 and 72–6). WNYC proposes to continue and to improve its long service to the citizens of the city, to commuters thereto, and to citizens and visitors in neighboring New Jersey and Connecticut.

272. WNYC presently broadcasts, as it has since 1943, 7 days a week, 16 hours per day, plus 1 additional hour during the period Eastern Daylight Time is effective (WNYC Exhibit 72–6). If its SSA operation is regularized, it proposes to continue broadcasting during these hours. Its 50 kW application requests authorization to broadcast 6:00 a.m. to 10:00 p.m. EST. WNYC's programming services are recognized by, among others, the Mayor of the City of New York (Tr. 2791, 2792, 2795–2808; WNYC Exhibit 72–1), the City Council (WNYC Exhibit 72–83), the several commercial stations (Tr. 3194, 3195), and the media in the city (WNYC Exhibit 72–6; Tr. 3194, 3198–3212).

273. In adopting its Resolution No. 775 requesting the FCC to grant the application of WNYC for an increase in its signal strength and for an extension of its broadcasting hours, the Council of the City of New York specifically referred to the programming service being rendered by WNYC (WNYC Exhibit 72–83). The Council in its resolution stated that:

> . . . Radio station WNYC is rendering a valuable public service to the community since it is the only station which broadcasts the City Council public hearings, the budget hearings, the Mayor's Press Conferences, daily councilmanic reports, other

public hearings conducted by various city agencies and commissions and United Nations Debates; . . .

. . . It makes these broadcasts available to all other radio stations in New York by way of Radio Line 1000; . . .

. . . In these times when our citizens are keenly interested in the affairs of government as a result of an increased interest and awareness in public affairs the WNYC communication media is essential; . . . .

274. The programming service being rendered and proposed by WNYC was recognized by at least 29 letters introduced into this record from distinguished individuals (WNYC Exhibit 72–36). The letters were received in evidence not for the truth of the matters stated therein, but to reflect broad recognition of the type and character of the WNYC programming. These letters are from:

R. Freelander, The Municipal Art Society of New York
Thomas D. Nicholson, Director, The American Museum of Natural History
Edward Thompson, Adminstrative Judge, Civil Court of the City of New York
Saul Goldzweig, Public Relations Director, United Neighborhood Houses of New York, Inc.
Bernard W. Gilbard, Vice Chairman, NAACP Metropolitan Housing Council
Arthur Grad, President, Polytechic Institute of Brooklyn
Thomas Newbold Morgan, President, The Clarion Music Society, Inc.
Newell Jenkins, Music Director, The Clarion Music Society, Inc.
Thomas M. Messer, Director, The Solomon R. Guggenheim Museum
Ms. Cynthia Tivers, Program Producer, Forest Hospital, Des Plaines, Illinois
Ollin Godfrey, Vice Chairman, East Harlem Community Corporation
Louis J. Lefkowitz, Attorney General, State of New York
Marie L. Fetsch, Founder-Director, Sands Point Country Day School Fetsch Academy
Ruth Hodgson Klein, Senior Extension Associate, Cooperative Extension, New York State
Robert Fry, Publicity Director, Torrence/Perrotta Management
Nat Trammell, Director of Public Affairs, New York City Council Against Poverty
Paul Jankowski, Acting Director, Radio and Visual Services Division, United Nations
M. F. Brink, Ph.D., President, National Dairy Council
Gerald Ginsburg, National Association for American Composers and Conductors

Robert Moulthrop, Assistant Director, The City University of New York
Edward Simmons, Chairman, Radio Committee, The National Academy of Television Arts and Sciences
Kitty Kirby, Director of Performing Arts, Police Athletic League, Inc.
Charles H. Brennan, Acting District Director, Internal Revenue Service
Alva Schollianos, President, The Public Forum Association, Inc.
Joel W. Harnett, Chairman, Board of Trustees, The City Club of New York
Attorney A. A. Giardino, former President of New York City Board of Education
Mortimer Getzels, Assistant to Attorney-In-Charge, The Legal Aid Society
Frederick Steinway, Executive Director, The National Orchestral Association, Inc.
Robert J. Kibbee, Chancellor, The City University of New York.

275. In general, WNYC's program format emphasizes public hearings, public forums, local news, special reports, action interviews, other public service broadcasts, informational types of programs for children and adults, and cultural programming (WNYC Exhibit 72–2 and 72–6). Approximately 45 percent of WNYC's broadcast time is devoted to public affairs, instruction and information; approximately 35 percent to classical music programming, which includes approximately 5 percent folk and ethnic music; and approximately 20 percent to spoken word and talk, including readings and drama (WNYC Exhibit 72–6).

276. A comprehensive regular program schedule is maintained by Municipal Broadcasting System, e.g. WNYC Exhibit 72–7, The Masterwork Bulletin, March–April 1972. As it has in the past, WNYC proposes, in the future, to continue to change its program schedule to accommodate the broadcasting of unscheduled and unanticipated events of important public interest (WNYC Exhibit 72–2). As printed on the back of the cover page of The Masterwork Bulletin, programs such as broadcasts of public hearings, special news events, United Nations proceedings and other events of city, state, and national interest take precedence over regularly scheduled programs. This procedure is referred to as WNYC's preemption policy. It is always in effect on all facilities licensed by the FCC to the city. Pursuant to the preemption policy, WNYC broadcasts significant public hearings of the United Nations Security Council, the General Assembly, the Economic and Social Council, and other U.N. organs, as well as public hearings of the City Council, other city commissions and agencies, state bodies, and others. WNYC is the only station specializing in the broadcasting of complete public hearings (WNYC Exhibit 72–6).

277. During the 1970 composite week (WNYC Exhibit 72–84), WNYC broadcast 115 hours on a noncommercial basis, devoting that time to the program types specified in FCC Form 301, Section IV-A, page 1 (WNYC Exhibit 72–66A) as follows:

	Hours	*Minutes*	*% of Total Time on Air*
News	37	20	32.4
Public Affairs	24	18	21.1
All Other Programs, Exclusive of Entertainment and Sports	7	33	6.5

278. the fact that WNYC operates exclusively on a noncommercial basis is significant, not only because of the flexibility it affords the station in utilizing its authorized broadcasting time, but also because it enables the station to devote 100 percent of its authorized time to programming without any interruptions for commercials.

279. The type and character of WNYC's proposed programming is, by categories, substantially similar to, and typical of, its present and past programming (WNYC Exhibit 72–6; Tr. 3003–3005). This is essentially true regardless of whether its SSA operation is regularized or its 50 kW application is granted. The prime consideration of WNYC, in presenting and prosecuting its 50 kW application, is the city's desire to make WNYC's signal strength sufficiently strong to cover adequately the entire area of New York City. Its SSA programming has been in existence since 1943 (WNYC Exhibit 72–2). If authorized to serve the public interest with 50 kW of power, WNYC proposes to devote certain of its public service programs to the needs of the area outside its city of license. The nature of WNYC's program subjects are generally of such broad interest that they are as applicable to residents of New Jersey and Connecticut as to residents of New York.

280. The proposed programming of WNYC, based upon a typical 112 hour broadcast week on a noncommercial basis, is as follows:

	Hours	*Minutes*	*% of Total Time on Air*
News	35	0	31.2
Public Affairs	23	0	20.5
All Other Programs, Exclusive of Entertainment and Sports	14	0	12.5

The proposed programming of WNYC is, by categories, substantially similar to its past programming.

WNYC Festivals and Block Programming

281. One of the distinctive aspects of WNYC's programming is its "festival format," a technique of concentrating many hours of broadcast time on a special theme or subject (WNYC Exhibit 72–20). The policy began many years ago. WNYC proposes to continue it (Tr. 3013, 3578). The oldest of these festivals is WNYC's Annual American Music Festival, first presented in 1940 and continued every year since (WNYC Exhibit 72–21). More recently, WNYC has used the "festival format" to devote an entire month of programming to investigate such important public issues as (1) the crisis in education, Educating the Young; (2) the growing problems of the elderly, The Sixth Age; (3) the problem of drug addiction, Drugs and Drug Addiction; (4) the views of women, Viewpoints of Women; and (5) the wealth of resources in cultural institutions, Museums of New York (WNYC Exhibit 72–20).

282. The "festival format" developed from the conviction that WNYC's position as a noncommercial station gave it the opportunity, and the corresponding responsibility, to devote large blocks of time to particular cultural objectives and the examination of particular public problems and areas of special interest. By concentrating an entire week of broadcasting, or longer, on a particular area of learning or the arts or a particular social problem, WNYC seeks to evoke a greater audience response then could be obtained by regularly scheduled weekly broadcasts. It also seeks, through this format, to attract the attention of other media to the activity or subject matter in question. During a festival WNYC attempts to probe deeply into a particular topic or area through the use of a "special schedule technique." This requires, insofar as possible, that the entire programming of the station during the festival be geared to the festival's theme or subject. Special Service Authorization time has been essential for the development and utilization of the "festival format."

American Music Festival

283. The American Music Festival was established by WNYC more than 35 years ago. It is held annually from Lincoln's Birthday to Washington's Birthday, February 12 to February 22, and it brings to WNYC's listeners a broad range of American musical compositions. In the course of the festival more than 100 special programs are broadcast, devoted to American music both past and present, oftentimes providing premier performances of American compositions and young artists (WNYC Exhibit 72–21).

284. The American Music Festival provides a unique outlet for new American composers (WNYC Exhibit 72–6). A regular festival feature, live concerts of works by established and unknown American composers, is made possible by the cooperation of the American Federation of Musi-

cians (which authorizes its artist-members to perform without pay), musical organizations, educational institutions, music schools and conservatories, and countless other organizations and individuals. In the 1972 festival more than 100 organizations, professional, academic, and amateur, and more than 25 college and university music departments participated (WNYC Exhibit 72–21). Such concerts are arranged for by WNYC as part of the music festival. Many of these concerts were broadcast pursuant to SSA. These included a Mu Phi Epsilon Concert from the National Arts Club, a Delta Omicron Concert from Donnell Library, a Sigma Alpha Iota Concert from Donnell Library, a Greenwich House Music School Concert from Greenwich House, and a Musicians' Club of New York Concert from Donnell Library. During the 1972 festival, more than 50 premieres of new works by young American composers, who would be hard put to find an opportunity for a radio performance elsewhere, were broadcast by WNYC.

285. The American Music Festival regularly features concerts from Town Hall, Carnegie, and other concert halls in New York City. In addition, in accordance with its "festival technique," the stations regularly scheduled programs, including The Brooklyn Museum Concert, the Masterwork Hour, and the Municipal Symphony, were integrated into the festival theme. Popular music is also included. By special arrangements with the producers of the musical production "Hair," the cast presented a special concert of excerpts from the play before a live audience at the Brooklyn Museum, which was broadcast on WNYC and WNYC-FM, February 17, 1972, from 3:45 p.m.–4:45 p.m.

Narcotic and Narcotic Addiction

286. Responding to the drug addiction problem, WNYC, utilizing its "block programming" technique, produced a week-long series of programs which surveyed among other things, the objectives of approximately 40 public and private organizations, in meeting the drug addiction problem. The series was broadcast in part during SSA hours and was awarded first prize for the best public affairs programming in New York by the Associated Press (WNYC Exhibit 72–22).

Educating the Young

287. Using a month-long survey technique, WNYC in 1970 produced over 35 programs to explore conflicting theories of how to educate the young to become knowledgeable citizens. Educators, authors, and classroom teachers from every strata of education, from the nursery to the adult level, and from the public and private sector, were interviewed concerning changes taking place in our schools and the methods of instruction being employed (WNYC Exhibit 72–23). The series was di-

rected to parents, school people, and students as well as to people without children (Tr. 3593).

The Lawrence Olivier Festival

288. Implementing its cultural programming policy, WNYC in 1971 presented a Lawrence Olivier Festival (WNYC Exhibit 72–32). The festival was repeated in 1972 (Tr. 3625).

289. During the festival which ran from September 1–7, WNYC broadcast all the known recordings of one of the twentieth century's greatest actors. The broadcasts ran for approximately 15 hours and were carried both during daytime and SSA hours.

The Shakespeare Festival and the Weekly Shakespeare Matinee

290. In 1952 WNYC began its week-long Shakespeare Festival on April 23, William Shakespeare's birthday. Special lectures on Shakespearian themes, as well as meetings of Shakesperian groups, are broadcast during the festival. In addition, the station's musical programs during this period feature compositions about, or inspired by, the works of Shakespeare (WNYC Exhibit 72–31). The Shakespeare Festival is an established feature on WNYC, but, because of other pressing problems, it has not been broadcast in the last three years. However, it was planned for April of 1973 (Tr. 3619, 3621, 3622).

The Sixth Age Festival and Weekly Program

291. In cooperation with New York City and State government agencies, the New Jersey State Division on Aging, private organizations, senior citizens, and others, WNYC, utilizing its "block programming" techniques, broadcast a month-long series devoted to the problems of the aged in a large city (WNYC Exhibit 72–6). The series, broadcast entirely pursuant to SSA in 1971, explored the many agencies and institutions providing services for this important segment of society (WNYC Exhibit 72–24).

292. A weekly program, The Sixth Age, resulted from this festival. This on-going program is produced by WNYC in conjunction with the New York City Office for the Aging, Office of the Mayor. It is broadcast every Sunday 12:30 p.m.–12:55 p.m. and again at 10:30–10:55 p.m. during daylight saving time (WNYC Exhibit 72–81; Tr. 4038).

293. Alice M. Brophy, the host of the on-going program The Sixth Age, testified in support of the application of WNYC for increased power and permanent hours (Tr. 4036–4059). Miss Brophy has worked in the field of the aging for 30 years and is presently Director of the New York City Office for the Aging and has served many important roles in national programs on this subject.

294. According to the 1970 Census, in New York City there are almost

one million residents over 65. They comprise approximately 12 percent of the city's population (Tr. 4038). The City University of New York and the research department of the Office for the Aging published a report in June 1971, entitled "Reduced Fare for the Elderly," which shows daily radio listening among the elderly in New York City to be 60 percent (Tr. 4038, 4043, 4044, 4058). This 60 percent figure represents the well or mobile elderly. For the elderly who are not mobile, the figure increases (Tr. 4043). However, because the Research Department of the Office for the Aging had not finalized its research data thereon, she was not able to supply an exact figure. Miss Brophy testified:

> . . . there is no regular radio or television program addressed to these excepting WNYC radio's 'The Sixth Age.' (Tr. 4038)
>
> * * *
>
> It has been my experience, as Director of the Office for the Aging, that the broadcast media programming for the elderly is sparse and in no way reflects the size of the potential listening and viewing adudience that would be interested in such programming.
>
> For example, I know of no other station than WNYC in the New York City area which has a weekly broadcast directed to the needs and problems of the aging. . . . (Tr. 4038)

295. Generally, commercial stations in New York have been very good in taking spot announcements from Miss Brophy which usually WNYC cuts and distributes for her (Tr. 4053).

296. Miss Brophy clearly distinguished the programming of WNYC from that of other stations:

> Occasionally a commercial station which itself is interested in an issue—and NBC was interested in retirement and pre-retirement counselling—will come to me and ask me to go on their program.
>
> But I still maintain what I did in my testimony—that there is no ongoing program related directly to the needs and concerns and problems of aged people which they can tune in on at a certain time during the day or during the week which they know about in advance. (Tr. 4051)

Viewpoints of Women

297. Utilizing its "festival technique," WNYC used the entire month of March 1971, to present 92 separate programs concerning Viewpoints of Women. This comprehensive series included programs of approximately 30 minutes duration, except for the 3-hour opera, "Carrie Nation," broadcast on Saturday, March 6 from 2:00 p.m.–5:00 p.m. The Viewpoints of Women programs were presented on each of the seven days of the week and at various hours of the day and night. In the time intervals 10:00

a.m.–12:00 noon, 4 programs were broadcast; 12:00 noon–2:00 p.m., 7 programs; 2:00 p.m.–4:00 p.m., 32 programs; 4:00 p.m.–6:00 p.m., 11 programs; and 8:00 p.m.–10:00 p.m., 37 programs (WNYC Exhibit 72–26).

298. On these programs, 80 women from a variety of vocations, occupations, and professions discussed their work, their personal role in today's society, and their views on life in general.

Lecture Series

Cooper Union Forum

299. Throughout the year, pursuant to SSA, WNYC broadcasts a lecture series known as The Cooper Union Forum (WNYC Exhibit 72–32A). The program runs for approximately one hour. Now broadcast on Friday evening, it was at one time presented on Thursday evening (Tr. 3024).

300. The Cooper Union Forum is one of the oldest adult education projects in America. Lectures are delivered in the Great Hall of the Cooper Union on Monday, Wednesday, and Friday evenings, October through March. The Monday and Wednesday lectures are taped by WNYC. While the Great Hall of the Cooper Union seats 1,600 persons, by means of the broadcasts over WNYC and through their cooperation over many of the 140 member stations of National Public Radio from coast to coast, the lectures are available to millions of listeners.

Other Lecture Programs

301. In its educational programming WNYC has broadcast lectures and talks from New York University, The School of Visual Art, and Drew University in Madison, New Jersey (WNYC Exhibit 72–6). Drew University Presents is a weekly presentation from 11:00 a.m.–12:00 noon on Sundays from its Madison, New Jersey campus. New York University Lectures is a weekly presentation from 12:00 noon-1:00 p.m. on Saturdays. The subjects of the lectures, of course, vary.

Magazine Spectrum

302. In order to accommodate the needs of the blind, shut-ins, those unable to read either because of temporary disability or otherwise, and the average person who may not be able to buy and read the hundreds of magazines and articles commenting on what is happening in the world, WNYC created and broadcasts the program Magazine Spectrum.

303. By means of Magazine Spectrum, WNYC presents verbatim readings of leading articles from respected magazines of all kinds. These include *The Atlantic Monthly, Fortune, New Yorker, The New Republic, The Nation, The National Review, Essence, Business and Society Re-*

view, U.S. News & World Report, Family Health, Cue, and *Newsweek.* Articles from each magazine are presented in half-hour programs on a weekly basis (WNYC Exhibit 72–19). For example, each week at 4:30 p.m.–5:00 p.m. on Monday, *The New Republic* is featured; on Tuesday, *Newsweek;* on Wednesday, *The Nation;* on Thursday, *Fortune;* and on Friday, *U.S. News and World Report* (WNYC Exhibit 72–7, 72–81, and 72–91). Similarly, at 2:30 p.m.–3:00 p.m. on Tuesday, *The National Review* is featured; on Thursday, *Family Health;* and on Friday, *Essence.*

The United Nations

304. It is WNYC's continuing policy and practice to provide complete coverage of the United Nations and its activities. From the first meeting of the United Nations in this country, at Hunter College on October 23, 1946, WNYC has broadcast the significant public meetings of the Security Council, the General Assembly, the Economic and Social Council, and other organs of the United Nations. These proceedings are broadcast by WNYC unedited and without interruption. When two or more of them are in session simultaneously, the most significant is broadcast. United Nations' broadcasts have precedence over WNYC's scheduled programs and are superseded only by important city, state or national events (WNYC Exhibit 72–11).

305. The broadcast of the morning U.N. General Assembly meetings commences at 11:00 a.m. and usually continues to early afternoon. The afternoon sessions usually commence at 4:00 p.m. and are broadcast until their conclusion, or until the expiration of WNYC's authorized broadcast hours.

306. In the 1970 composite week (WNYC Exhibit 72–84), the basic week for analysis of WNYC past programming (WNYC Exhibit 72–60 and 72–66A), WNYC broadcast the General Assembly meeting direct from U.N. Headquarters from 11:00 a.m.–12:30 p.m. on Friday, November 21, 1969. This meeting included speakers from Uganda, Togo, Nigeria, and Peru (WNYC Exhibit 72–61). On the same day it broadcast the afternoon session from 4:00 p.m. until its conclusion at 5:45 p.m. This meeting included speakers from Norway, Liberia, and Belgium. Despite the early hour of the conclusion, but for the SSA WNYC could not have carried the session to its conclusion.

307. WNYC's complete coverage of the United Nations has been made possible only by SSA's. For example, between September 16, 1971, and December 30, 1971—a period of 106 days—WNYC utilized SSA time on 35 different days to broadcast the proceedings of the United Nations which commenced at 4:00 p.m. (WNYC Exhibit 72–11). On 11 of these 35 days, the broadcasts carried to the end of the SSA authorized time, at which time, because of the significance of the subjects, the broadcasts were carried to conclusion on WNYC-FM. During this period (September

16–December 30, 1971), 406 p.m. hours were authorized by WNYC's SSA. Of that amount, 60 hours and 49 minutes were devoted to broadcasting U.N. proceedings. Thus, WNYC was the only radio station in New York City to provide complete coverage of the United Nations debate on the India-Pakistan Conflict and the discussions preceding the admission of mainland China (WNYC Exhibit 72–2).

308. WNYC maintains a permanent remote installation at United Nations Headquarters (WNYC Exhibit 72–2). This is used not only for the broadcast of the United Nations sessions but also for U.N. Report, a 5-minute report and summary of United Nations news and developments broadcast seven days a week at 6:50 p.m. except when an actual United Nations session runs through this time (WNYC Exhibit 72–91). U.N. Report is broadcast pursuant to SSA five months of the year.

Towards International Understanding

309. WNYC remains committed to the principle that one of the duties of a channel of communications in a democracy is to contribute to a better understanding among the peoples of the world, both within New York City and elsewhere. In fulfillment of this obligation, WNYC devotes substantial time to broadcasting on an *ad hoc* basis the sessions of the United Nations and its constituent organizations, discussions of international and intercultural relationships and problems, and reports of current developments at home and abroad. WNYC also features a number of regularly scheduled, continuing program series devoted to these matters (WNYC Exhibit 72–35; Tr. 8160).

310. Foreign Press Reviews are broadcast Monday through Friday from 6:00 p.m.–6:45 p.m. pursuant to SSA from October through January. Coordinated by the Broadcasting Foundation of America, of which WNYC is a member (WNYC Exhibit 72–66 and 72–66A), the daily presentations enable a listener to learn how people in other parts of the world view events, as reflected in the editorial comment in the newspapers and journals of foreign origin. The weekly programs are produced by the Broadcasting Foundation of America or representatives of foreign governments such as the Netherlands Information Service in New York, Radio Sweden in New York, Belgium Radio in Belgium, German Embassy in New York, Radio Canada-Montreal, Israel Consulate in New York, and Radio Finland in Finland. WNYC thus on Monday brings to its listeners 15 minute programs on Indian, Australian, and Netherland editorial comments; on Tuesday, those of Sweden, Belgium, and Great Britain; on Wednesday, those of Germany, London, and Canada; on Tursday, those of Arab states, Israel, and Finland; and on Friday, those of Italy, France, and Japan (WNYC Exhibit 72–35; Tr. 3634–3636). As of March 16, 1973, the 15 programs were augmented by the addition of Yugoslavian and Latin American editorial comments on Monday. The

editorial comments from the Netherlands press also were broadcast at 5:30 p.m. on Tuesday (WNYC Exhibit 72–91).

311. On Tuesday at 9:00 p.m. during 1972, WNYC broadcast Hispanidad, Spanish New York Talking. As Peter Block testified, the broadcast featured public affairs, culture, education, history, music, and poetry (Tr. 4157) to serve Spanish Americans, those of Spanish descent, and also those who are interested in the Hispanic community and Hispanic culture (Tr. 4149).

312. In addition, WNYC plays a role as a transmission service to American agencies seeking to maintain the friendship and respect of foreign peoples. Accordingly, WNYC maintains close liaison with the Voice of American and foreign broadcasting systems, including those of France, Canada, Italy, Japan, and the Netherlands. WNYC thus serves as an outlet for programs from abroad, including the broadcasting of great music festivals from the cultural centers of Europe made available by the Broadcasting Foundation of America (WNYC Exhibit 72–6). It also provides programs for rebroadcast abroad. WNYC also uses the Masterwork Hour to contribute to a better cultural understanding between the United States, its friends and allies be broadcasting special programs on that feature to commemorate national holidays of other lands (WNYC Exhibit 72–27).

Public Hearings

313. WNYC specializes in the broadcasting of complete public hearings (WNYC Exhibit 72–6), whether local, state, national or international. It preempts regularly scheduled programs for this purpose. WNYC broadcasts, and proposes to continue to broadcast, complete public hearings before the City's Council, Planning Commission, Board of Estimate, Board of Correction, and Committees thereof. It has broadcast, and proposes to continue to broadcast, hearings before state authorities, such as the New York State Gambling Commission (WNYC Exhibit 72–6), and the State Commission on the Powers of Local Government (WNYC Exhibit 72–8), and Federal authorities, such as the Senate Foreign Relations Committee (WNYC Exhibit 72–8), the Monopoly Subcommittee of the Senate Select Committee on Small Business, and the Watergate Hearings.

314. For example, on Monday, May 25, 1970, during the 1970 composite week, WNYC broadcast from 10:15 a.m. to its conclusions at 7:40 p.m. live, from its remote facility at the City Hall Council Chambers, rent control hearings which included presentations by 69 speakers (WNYC Exhibit 72–61). Public hearings broadcast have considered such matters as taxi fare hikes; death, suicide, medical and mental health care in the city's prisons; alleged corruption in the municipal loan program; revision of the city's Air Pollution Control Code; prevention and treatment of

alcoholism; schools for the handicapped; compulsory arbitration and city employees; and the powers of local governments in the State of New York. Among the most significant local hearings broadcast are those held by the Board of Estimate and the City Council on budgetary priorities as reflected in the Executive Expense and Capital Budgets (WNYC Exhibit 72–8). Other hearings broadcast have included subjects such as discrimination against homosexuals, issues raised by the state-wide transportation bond referendum, public health, alleged corruption in the New York City Police Department, and legalized gambling (WNYC Exhibit 72–7). Broadcasts of City Council and City Planning Commission hearings provide an official and permanent record of those meetings (Tr. 3638–3639).

315. WNYC presentations of public hearings have become more frequent and important with the passage of time (WNYC Exhibit 72–8; Tr. 3501–3505). The broadcasts thereof by WNYC thus affords each listener who is unable to attend the opportunity to hear the full story and arrive at his or her own conclusion (Tr. 3669). WNYC not only broadcasts these hearings, it also feeds the broadcasts to other stations in New York City, hooked up to its special Radio Line 1000 (WNYC Exhibits 72–2 and 72–6). On occasion, some of these other stations do take advantage of the WNYC service. The City Council of the City of New York, by resolution, declared the broadcast of these public hearings, as well as the feed thereof to other radio stations, an essential, unique and valuable public service (WNYC Exhibit 72–83).

Councilmen Report

316. The legislative body of New York City, the City Council, has 37 Councilmen. All official actions affecting the structure of the City Government, the power and duties of its officers, and their terms of office and compensation are enacted as local laws by the Council. So, too, is all local legislation regulating or affecting persons within the jurisdiction of the city. In order to make available information and ideas connected with city government, WNYC broadcasts Councilmen Report at 6:30 a.m.–6:45 a.m., repeated at 6:30 p.m.–6:45 p.m., Monday through Friday, unless a Councilman is not available (Tr. 3637). The program features a different Councilman each day, who reports on any and all matters affecting the city (WNYC Exhibits 72–6 and 72–9).

Corporation for Public Broadcasting and National Public Radio Network

317. WNYC is a member of the national Public Radio Network (NPR) established by the Corporation for Public Broadcasting (CPB). No other AM facility in the New York, New Jersey or Connecticut area is such a member (WNYC Exhibit 72–12; Tr. 3365–3366, 3368–3369). WNYC-FM

is the only FM facility in the same area which is a member (Tr. 3368–3369).

318. CPB is a District of Columbia nonprofit corporation established in 1967. The Congress of the United States, in authorizing the establishment of the corporation, found and declared that it was in the national public interest to encourage the growth of noncommercial educational radio. CPB has a Board of Directors consisting of 15 members appointed by the President, by and with the advice and consent of the Senate.

319. By virtue of its membership in CPB, WNYC is eligible for, *inter alia*, broadcasts of NPR programs, grant funds, and also membership in NPR. The latter is a nonprofit organization, based in Washington, D.C., which receives funds from CPB (Tr. 3368; WNYC Exhibit 72–12).

320. The Director of Radio Activities of NPR testified in support of the grant of the WNYC application, stating:

> . . . since the inception of National Public Radio, WNYC and WNYC-FM have been member stations of National Public Radio. Because WNYC is a noncommercial station owned and operated by the City of New York it is eminently qualified to be a member of NPR. Indeed, in the NPR network comprising membership of 126 licensees operating 149 noncommercial stations as of January 1973 (Tr. 3350) throughout the United States, WNYC-AM and WNYC-FM are the only member stations in the entire New York, New Jersey and Connecticut metropolitan area. (WNYC Exhibit 72–49, p. 4)

321. As the flagship station, WNYC is a distribution facility for the network and also provides programming for the network (Tr. 3489–3492).

Government and Your Health and Other Regular Health Programs

322. WNYC has long been a forerunner in broadcasting science and health programs, thus recognizing the public's need for information regarding health. The station proposes to continue to broadcast such programs (WNYC Exhibit 72–10; Tr. 3538–3539).

323. Every Wednesday from 9:00 p.m.–9:30 p.m., pursuant to SSA, WNYC broadcasts Government and Your Health (WNYC Exhibits 72–10, 72–81, and 72–91). In cooperation with the New York State Deparmtent of Health, a wide range of health considerations are discussed on Government and Your Health, including the city-state cooperative role. Prepared by health professionals, the programs are directed at laymen and intended to be beneficial to all citizens.

Musical Programming

324. Serious music is an important part of WNYC's programming. It proposes to devote 35 percent of its broadcast time in the future to cultural music programs, including its Regular Musical Features (WNYC Exhibit 72–28); Opportunities for Young Artists and New Talent: Music Schools: Concerts (WNYC Exhibit 72–29); Summer Music (WNYC Exhibit 72–30); and The Masterwork Hour (WNYC Exhibit 72–27).

The Masterwork Hour

325. The cornerstone of WNYC's musical programming is The Masterwork Hour, a recorded program of serious music, presented twice each day from 9:00 a.m.–10:30 a.m. and from 7:00 p.m.–8:30 p.m. The evening program is broadcast pursuant to SSA during the greater part of the year (WNYC Exhibits 72–4 and 72–27). The Masterwork Hour was created approximately 50 years ago in the conviction that one of the functions of the municipal station should be to provide good music unhampered by any limiting requirements of commercial sponsorship (WNYC Exhibit 72–27).

326. The Masterwork Hour also is the only musical program in New York City to be broadcast twice each day. This is a matter of importance not only to working people who cannot hear the morning broadcast but also to music students and musicians.

Regular Musical Features

327. Each Monday, Wednesday, and Friday from 11:00 a.m. to noon, WNYC broadcasts recorded concert music in Baroque Music Master. On Tuesday at this time, it broadcasts Bach Cantatas. Thursday at this time is devoted to Contemporary Composers (WNYC Exhibits 72–7, 72–81, and 72–91). The Midday Symphony is broadcast from 12:00 p.m. to 1:00 p.m. on Monday through Friday. From 1:00 p.m.–1:45 p.m., Famous Artists are featured.

Folksong Festival

328. Folksong Festival is presented on WNYC on Sunday evenings from 6:00 p.m. to 6:30 p.m., usually live, pursuant to SSA during the fall and winter. The program features noted recording artist and folksong specialist, Oscar Brand.

Young Artists and New Talent

329. WNYC makes it possible throughout the year for general music students, as well as those attending music schools, to demonstrate their talents and acquire vital experience in performing on the air. In coordination with the Board of Education, the Board of Higher Education, State chartered music schools, and other authorities in the field of music, artists are selected for broadcasts by WNYC's Music Director solely on the basis of their talent (WNYC Exhibit 72–29).

330. Two prominent regularly scheduled programs presenting opportunities for new talent are Keyboard Artists broadcast on Sunday evening from 6:30 p.m. to 6:45 p.m. Song Classics provides opportunities for voice soloists, while Keyboard Artists features pianists. Many artists from abroad, unfamiliar with the American way of introducing new artists, have found such programs helpful in getting started.

331. During the winter, by virtue of its SSA, WNYC has been able to broadcast live from Carnegie Hall and Town Hall the winter series of concerts of the National Orchestral Association and of the National Association of Composers.

Summer Music

332. In the summertime, WNYC broadcasts live, pursuant to SSA, the Guggenheim Memorial Concerts by the Goldman Band from Central Park Mall and the Naumburg Memorial Concerts from Central Park.

333. The Naumburg Memorial Concerts are given in Central Park each year on Memorial Day, Independence Day, July 31, and Labor Day. These performances by leading young artists of the concert field are identified with the observance of the holidays on which they are presented. In addition, during July and August concerts by the New York Philharmonic and the Metropolitan Opera Association from various city parks are broadcast on WNYC.

News, Emergencies, and Public Events

334. WNYC policies and practices regarding news, emergencies, and public events result in its having no news commentators or analysts. It has announcers, with the Senior Announcer assigned as News Director (WNYC Exhibit 72–63). Local and regional news is emphasized, with special emphasis on news of city government and local items which other stations may deem low in priority (Tr. 3575; WNYC Exhibits 72–2 and 72–17). Where possible, the station will take its listeners directly to the scene of a story or event and let them judge for themselves the significance of events as they occur (WNYC Exhibits 72–16 and 72–18). WNYC has available the Associated Press Radio Wire, the United Press International Local Radio Wire, the United Press International National Radio Wire, and the United Press International Audio Service (WNYC Exhibit 72–63).

335. As the flagship station of the NPR network, WNYC alone in the New York, Connecticut, and New Jersey area has daily feeds via radio lines of news events and hearings taking place in the Nation's Capital and elsewhere (WNYC Exhibit 72–12). In addition, by virtue of its noncommercial, adjunctive position with the city, WNYC alone has direct lines to every city agency whereby, the moment any news breaks, the station receives the information and puts it on the air immediately (Tr. 3465). WNYC alone has direct, immediate and regular connection and communication with the public utilities, the Transit Authority, the Port of New York Authority, hospitals, and shipping lines (Tr. 3465–3468; WNYC Exhibit 72–2). WNYC alone has a microphone immediately and regularly available to the Mayor of the City of New York for press conferences to discuss public issues (Tr. 2799, 2800, 2801, 2803, 2808), for special occa-

sions (Tr. 2797), and for times of crisis (Tr. 2802). It alone has a special Police Department teletype which provides continuous police reports from the several police precinct houses throughout the city. Receivers on the Police and Fire Department's city-wide radio frequencies, available to WNYC, provide additional sources of information. A broadcast relay facility installed in a special Fire Department community service vehicle, which responds to multi-alarm fires, provides status reports to WNYC (WNYC Exhibit 72–63).

336. In addition, WNYC maintains, as it has for many years, direct connections with such news producing agencies and locations as the United States Weather Bureau at Rockefeller Center, the United Nations Headquarters at 42nd Street and 1st Avenue, the Armed Forces Headquarters at 90 Church Street, City Hall, Gracie Mansion, the Department of Consumer Affairs, Missing Persons Bureau, City Council Chambers, Board of Estimate Chambers, Waldorf Astoria Hotel, the New York and American Stock Exchanges, and several additional remote points (WNYC Exhibits 72–2, and 72–16). WNYC also maintains three Mobile Communications Units, plus several trucks and automobiles equipped with radio relay facilities to permit origination of broadcasts of news events from the field. Four portable battery operated tape recorders and walkie-talkies permit coverage of news conferences, activities and other events in the field.

337. In emergency situations, such as five-alarm fires, train wrecks, plane crashes, power failures, major water main breaks, or major weather developments, WNYC's entire staff is converted into a news gathering and reporting organization (WNYC Exhibits 72–16 and 72–63). In such a situation, WNYC's preemption policy can be utilized to cancel regular programs in order to broadcast as complete and as wide a description of the event as possible.

338. One of WNYC's prime functions is to serve as the voice of the municipality, and a source of accurate information during emergency situations. As Police Commissioner Donald F. Cawley testified in support of WNYC's application:

> The dissemination of information to the public, both in time of emergency and non-emergency is essential to the discharge and responsibilities assigned to the [Police] department. Station WNYC, as an adjunct of the government of the city constitutes an essential tool in assisting the department in discharging its responsibilities in this vital function. By this statement, I in no way mean to detract from the service rendered by other stations to the department, the city, its citizens and visitors. My intention is to emphasize the importance of a city owned, non-commercially operated AM station to the department and the public convenience and necessity. WNYC, a Municipal Department, is informed under standard procedures by the Police Department in times of emergency [and] operates as an instrumentality of the City Government and transmits over the air immediately, vital information and instructions to the public. In addition through the maintenance of the dedicated telephone line by WNYC, the information is authoritatively transferred to other broadcasts in the city (Tr. 4198, 4199).

339. WNYC regularly broadcasts 5-minute hourly news broadcasts plus three 15-minute news broadcasts at 10:45 a.m.–11:00 a.m., Monday through Friday, and Sunday through Saturday from 1:45 p.m.–2:00 p.m. and 6:45 p.m.–7:00 p.m. (WNYC Exhibits 72–2 and 72–91). In addition, on Monday through Friday from 5:00 p.m.–6:00 p.m. WNYC broadcasts New York City News in a program called The News You Need (WNYC Exhibit 72–71). During this hour WNYC endeavors to present events that are particularly germane to New Yorkers (Tr. 3570), including both news that is making headlines and events of a more local character (Tr. 3575).

340. A six-page listing of special news reporting items and events which were produced by and broadcast on WNYC in recent months, which Program Manager Pyatt testified are typical (Tr. 3573), illustrates the comprehensiveness of this hour-long program, The News You Need (WNYC Exhibit 72–17).

341. In addition, WNYC broadcast a Model Cities Program offering a 15-minute roundup of news of special interest to minority communities in New York City and outlying areas at 4:15 p.m. on Fridays in 1972. The program was prepared, produced, and performed by members of the Satellite Radio Training Program, sponsored by Central Brooklyn Model Cities. This satellite type broadcast service provided minority groups and communities an outlet over WNYC (WNYC Exhibit 72–6). Also, on Friday from 5:30 p.m.–5:45 p.m., WNYC in 1973 broadcast Focus on the Community. This is a news series from the inner city produced by members of the Full Opportunity Committee, a Model Cities Program (Tr. 3063), to provide minority trainees with opportunities to learn reporting skills (WNYC Exhibit 72–6).

Weather

342. WNYC includes weather information in its regular news broadcasts at five minutes before each hour. In addition, WNYC has five regularly scheduled weather broadcasts each day direct from the National Weather Service Office at Rockefeller Plaza at 6:15 a.m., 7:00 a.m., 7:45 a.m., 1:45 p.m., and 6:45 p.m. (WNYC Exhibits 72–16 and 7247; Tr. 4060). The evening report is presented pursuant to SSA five months of the year; the first morning report pursuant to SSA four months of the year; and the first two morning reports two months of the year.

343. The WNYC weather broadcasts differ from those of other stations in New York City. John A. Mayer, Meteorologist in Charge of the National Weather Service Office in New York City, testified in support of WNYC's application (WNYC Exhibit 72–47). These programs are broadcast directly from the United States National Weather Service Office by the meteorologist himself (Tr. 4063). They are not briefs but complete summaries (WNYC Exhibit 72–47). They include information of interest to fishing and maritime groups as well as "degree day" data for the use of fuel

companies, heating engineers, and homeowners. Notice of WNYC's weather broadcasts is carried in journals and publications of occupations and groups which depend upon such information. This notice even is included on charts distributed by the National Weather Service. These complete summaries are broadcast at times which take advantage of national data collection and forcast release schedules and at times of maximum interest and usefulness to users.

344. While weather information is available from other radio stations, television stations, private meteorologists and other sources, WNYC is the only station in New York City with regular broadcasts direct from the national Weather Service. It is the only station on which the weather announcers are professional meteorologists, with access to all the resources of the National Weather Service as a basis for enlarging and commenting upon the official weather forecasts.

345. WNYC's weather coverage direct from the National Weather Service is particularly valuable during weather emergencies. On such occasions WNYC makes unlimited time available to the National Weather Service so that the public can be informed hour by hour, or as necessary, directly from a microphone in the Weather Service Office (WNYC Exhibits 72–6 and 72–47). Also during the morning traffic program, Travelers Timetable, WNYC uses the National Weather Service as yet another live remote point for its coverage of all matters affecting the flow of traffic and the movement of people in the city. The station is ready to receive and broadcast updated reports every 15 minutes, or less, should the weather conditions so require (WNYC Exhibit 72–16).

Election Coverage

346. On election days WNYC's full resources are mobilized to bring to its listeners full and complete returns as quickly as possible, emphasizing local offices, such as school board, judgeships, and state representative contests (WNYC Exhibit 72–16). Although it has the facilities of the Associated Press and the United Press available to it (WNYC Exhibit 72–63), WNYC also has its own special tehcniques for covering elections in order to bring to its listeners comprehensive reporting on the complete returns of local elections as soon as possible (WNYC Exhibits 72–6 and 72–16).

347. On election nights, WNYC establishes remote pick-up points at the various party headquarters and at Police Headquarters. Also, it assigns representatives from the station to each of the county headquarters to maintain constant communication with the studios by telephone. It also uses stringers for election coverage purposes (Tr. 3489). This special service would be completely lost to WNYC listeners if it were required to sign off on election days at 5:45 p.m., the licensed sign off time

(WNYC Exhibit 72–16). Indeed WNYC's election night coverage is hampered by the 10:00 p.m. constraint of its SSA.

348. In addition to its coverage of election night returns, WNYC, prior to an election, makes time available for every candidate running for political office (Tr. 3566). WNYC concentrates its coverage on local elections, as distinguished from the coverage of national elections by the networks (WNYC Exhibit 72–16). Candidates running for the vital but less well publicized offices, such as judge, assemblyman, councilman, and school board receive the broadest possible coverage on WNYC. WNYC provided broadcast time for over 60 candidates for school board districts in the 1970 election both during daytime and SSA hours.

349. WNYC is unique in the time and energy which is devoted to the local, not-well-known political races such as the borough precincts, assemblyman districts, and school board elections whereas the other radio and TV stations in New York, while including election coverage, carry only the major political races (Tr. 3562).

Spot Announcements

350. WNYC's policy, past and proposed, regarding spot announcements is to present noncommercial, public service material based on the needs of city departments and public service and philanthropic agencies.

351. During the 1970 composite week, WNYC broadcast 106 public service announcements (WNYC Exhibit 72–66A). The Health Department, Fire Department, Traffic Commission, Police Department, and a large number of other municipal agencies are constantly disseminating important information to the public via WNYC's spot announcements (WNYC Exhibit 72–14; Tr. 4199).

352. WNYC also cooperates in presenting spot announcements for a large number of public service and philanthropic organizations such as the Red Cross, March of Dimes, New York Heart Association, Goodwill Industries, Catholic Relief Services, Community Service Society, American Cancer Society, Visiting Nurse Service, CARE, and The Salvation Army.

353. The timing of many of these spot announcements is important. There never is any difficulty in arranging for them to be broadcast at the optimum time on WNYC, since there are no commercial, business, or special interests preventing necessary, timely and immediate exposure (WNYC Exhibit 72–6; Tr. 4199). Yet, to reach as large an audience as possible, it is often necessary that they be carried both during the day and at night, the latter to reach working people with no access to radios on the job (WNYC Exhibit 72–14). The SSA makes this possible.

354. As a matter of cooperation and with the hope that other stations will run the spot announcements, WNYC makes 25 to 30 copies of these broadcasts and gives them to all the commercial stations which the

agencies wish to serve (Tr. 3558, 3559), but WNYC never has received a spot announcement prepared by another station. WNYC also has taped "spots" for agencies of the federal government.

An Outlet for Productions of Others

355. One of WNYC's functions has been the presentation of programs produced by other stations, broadcasting systems, or organizations which otherwise would not be available to New York City listeners. Thus, The Northwestern University Reviewing Stand, from the University, is presented Friday at 2:00 p.m.–2:25 p.m. (WNYC Exhibit 72–6, 72–7, 72–81, and 72–91).

356. Smithsonian Report, produced by the Smithsonian Institution in Washington providing the latest in research, is broadcast on Sunday 12:00 p.m. to 12:30 p.m. (WNYC Exhibit 72–6, 72–7, 72–81, and 72–91).

357. WNYC on Fridays at 9:30 p.m.–10:00 p.m. broadcast in 1973 a series, The Search for Mental Health (Tr. 2977). The series provided information on mental health by psychiatrists and behavioral scientists, was produced by Forest Hospital, Des Plaines, Illinois, and was not carried by any other station in the New York City area (WNYC Exhibit 72–6). On Wednesday, from 9:30 p.m.–10:00 p.m., WNYC broadcasts The Minorities. This weekly program, devoted to activities and developments affecting ghetto groups, was produced by the Community Corporation of Harlem (WNYC Exhibit 72–6 and 72–7).

358. On Saturdays at 8:30 p.m.–9:30 p.m., WNYC broadcasts The Public Forum (WNYC Exhibit 72–81). This weekly program, presented by the Public Forum Association, explores the problems of rebuilding the inner city (WNYC Exhibit 72–6).

359. On Monday from 8:30 p.m. to 9:00 p.m., WNYC broadcasts Know Your Rights (WNYC Exhibit 72–91). This series of programs, produced by the Executive Director of the New York Civil Liberties Union, provided information regarding the Civil Liberties Union's efforts in areas such as rights of soldiers, mental patients, prisoners, and women (WNYC Exhibit 72–6).

Special Programs Assisting Government Agencies

360. WNYC always is available to all levels of government in the discharge of their governmental duties, for the use and benefit of the public. Cooperation with, and assistance to, departments of government—city, state, and national—are several of WNYC's primary obligations. These obligations the station seeks to meet day in and day out, and at all times of the day. It meets them in part through its broadcasts of news and special events, through its on-the-scene coverage of the functions and ceremonies of government, through its spot announcements, and through special programs. It also meets these obligations through

regularly scheduled, established program features (WNYC Exhibit 72–9).

361. On the premise that the consumer needs information and needs it constantly, WNYC presents a daily report from, and in cooperation with, the New York City Department of Consumer Affairs. Information gathered by this city agency relative to business practices (such as phony television repair services, false promises from modeling agencies, and consumer abuse from supermarkets and other retail outlets) is broadcast in Consumer Report. Consumer Report is broadcast, Monday through Friday, at 8:45 a.m.–8:50 a.m., 2:25 p.m.–2:30 p.m., and 4:55 p.m.–5:00 p.m. (WNYC Exhibit 72–9, 72–81, and 72–91).

362. In cooperation with the New York State Attorney General and the State of New York Bureau of Consumer Fraud and Protection, every Sunday at 9:30 p.m.–9:55 p.m., WNYC broadcasts Consumer Protection (a.k.a. Consumer Frauds). The report is concerned with new laws and pending legislation on the state level and has dealt with such subjects as computer dating, condominiums, and lead poisoning.

363. Responding to the needs of the many veterans, WNYC broadcasts weekly programs in cooperation with the Veterans Administration of the City of New York, and the U. S. Veterans Administration. Veterans Voice is presented Sunday from 6:30 p.m.–6:45 p.m. in cooperation with the City Veterans Administration. VA Today, in cooperation with the Federal Veterans Administration, is broadcast from 9:30 p.m.–10:00 p.m. on Tuesday (WNYC Exhibit 72–6).

364. Newton H. Fulbright, Area Representative for the Information Service of the Federal Veterans Administration for the New York, New Jersey, and Pennsylvania area, testified concerning the valuable service VA Today provided to the Veterans Administration and veterans (WNYC Exhibit 72–42). The Tuesday evening program, he testified, provides the facility for the VA to broadcast news of VA benefits to some 2 million veterans in the metropolitan area, including northern New Jersey. Programs, involving VA officials and their guests talking to veterans about their problems and the benefits Congress has extended to them, have included subjects ranging from drug treatment to education benefits, news of home loans, and on-the-job training. A distinctive characteristic of Radio WNYC, Mr. Fulbright testified, is that people with the facts are permitted to talk about them and to explain precisely what the eligible citizen must do to qualify.

365. Robert Coffman, the Director of Community Education and Public Relations for the City Department of Services, Special Services for Children Program, testified as to the special value of the program Children Can't Wait (Tr. 4134–4138). In the foster care and adoption of children, the City Human Administrator is charged with the responsibility, among others, to provide the best possible care on an individual basis to

each child (Tr. 4135–4136). This responsibility is carried out by the Administrator through the Special Services for Children Program, with the cooperation of private agencies and the community. Children Can't Wait broadcast by WNYC gives the department the opportunity to inform the citizens of New York City concerning the services which are provided to more than 28,000 dependent, neglected, and abused children in need of care outside of their home and to give services to families and children in their home. This half-hour weekly program previously had been broadcast at 2:30 p.m. in the afternoon. Because it was necessary to reach people who were at work or engaged in daytime activities, it was moved to, and is now broadcast at, 8:30 p.m. on Tuesday evening (Tr. 4136–4137).

366. Expanding the scope of WNYC's coverage by the grant of its 50 kW application would assist Mr. Coffman's department in reaching the entire metropolitan area where it seeks help and cooperation. It would also insure exposure during the evening hours. The more than 80 private agencies involved in aiding the department to service these children participate in these weekly programs. No other radio station in New York City provides such a weekly program dealing with the needs of dependent, neglected, and abused children and the services available to them (Tr. 4136).

367. In cooperation with the Mayor's Committee on Child Abuse, WNYC broadcast on Monday from 2:30 p.m.–3:00 p.m. Our Forgotten Children (WNYC Exhibit 72–6, 72–7, and 72–91). This program, endeavors to disseminate information on all phases of child abuse, in order to encourage community involvement in eliminating child abuse.

368. In cooperation with the Mayor's Committee on the Handicapped, WNYC broadcast a series in 1972 from 8:30 p.m.–9:00 p.m. on Wednesday, Improving Life for the Handicapped. This series was intended to inform the thousands of handicapped individuals and their families of the services available to the mentally retarded and handicapped. This series was presented by the Director of Mental Retardation Services for the city, working with the Interdepartmental Conference on Mental Retardation, a 20-member body. WNYC also made this series of programs available to other stations throughout the country (WNYC Exhibits 72–6 and 72–91).

Travellers Timetable

369. The need for traffic information within the area served by WNYC is recognized by the Commissioner of the City Traffic Department and others. Functioning as an arm of the Traffic Department, the City Police Aviation Unit, the Metropolitan Transportation Authority, and other related agencies. WNYC broadcasts from 6:00 a.m. to 8:45 a.m., Monday through Friday, Travellers Timetable. This is continuous reporting on traffic, transit, and train movements throughout the city, including bridge and tunnel approaches (WNYC Exhibit 72–6 and 72–15). WNYC

was awarded the Alfred P. Sloan Award for Highway Safety in 1970 for this program. New York City is one of the most heavily congested urban areas in the United States. Advising the public of the status of service being delivered by each mode of transportation is an important and essential function being performed by WNYC (WNYC Exhibit 72–39).

370. WNYC, by means of Travellers Timetable, reports comprehensive transportation information from several sources. This includes the city's traffic headquarters at Long Island City where field reports of traffic conditions throughout the city are received, from the transit authority, the railways, and the police aviation helicopter. The policeman in the helicopter reports directly on the air through WNYC (Tr. 3447–3449). The program features continuous traffic reporting. As the Commissioner of MTA testified, WNYC broadcasts what many consider to be the best transportation news in the region (WNYC Exhibit 72–71).

371. WNYC maintains a permanent remote facility at the Police Department's Missing Person's Bureau. On a regular basis, as it has for over 40 years, the station reports information therefrom at 1:50 p.m. (WNYC Exhibit 72–2 and 72–81; Tr. 4199). Finding persons as a result of the regular broadcasts on WNYC has had noteworthy results (Tr. 2807). WNYC also broadcasts ceremonial functions of the Police Department, such as graduation, awards, and memorial functions. WNYC also broadcasts each Thursday 9:30 p.m.–10:00 p.m., Signal 1085, Meet the Police (Tr. 4200). This program is designed to inform the public concerning the services and functions provided by the Police Department, as well as information dealing with crime prevention and community involvement programs (Tr. 4200). For example, the topic of one such program was Auto Theft and How to Prevent It (WNYC Exhibit 72–85). On Wednesday at 5:30 p.m.–5:45 p.m., WNYC broadcasts Your Fire Department which includes advice on fire prevention techniques (WNYC Exhibit 72–81).

Programming for Youth

372. As it has for over 15 years, WNYC broadcasts a weekly program for the Police Athletic League, PAL Presents. The station also broadcasts a number of programs for the entertainment of teenagers and small children, for participation by young people, and for teenage expression of ideas (WNYC Exhibit 72–6, 72–7, 72–81, and 72–91). A good part, but not all, of the station's programming for or about young people is presented on the weekend in daytime hours.

373. On Saturday, Children's Center is broadcast from 7:00 a.m.–7:30 a.m., Children's Books from 7:30 a.m.–7:45 a.m., Children's Literature from 8:00 a.m.–8:30 a.m., and Teenage Book Talk from 10:30 a.m.–11:00 a.m. Children's Books, Children's Literature, and Teenage Book Talk are produced in cooperation with the New York City Public Library. Children's Center, produced by the WNYC staff, is designed to serve the

needs of children and parents for information on where to take children for entertainment and education (WNYC Exhibit 72–6).

374. PAL Presents, which is an important part of the Police Department's general crime prevention program (Tr. 4199), is broadcast on Saturday, 8:30 a.m.–8:55 a.m., as a regular weekly feature (WNYC Exhibit 72–6, 72–7, 72–81, and 72–91). In addition, PAL teenagers are afforded broadcast time on other programs. For example, PAL teenagers discussed "How the Bill of Rights Are Being Treated in 1973" on the 5:00 p.m.–5:30 p.m. program A Look At Ourselves on Saturday, July 7, 1973 (WNYC Exhibit 72–81 and 72–85).

375. On Sunday morning WNYC broadcasts Children's Center from 8:00 a.m.–8:30 a.m., a program which describes activities available for children, and Singing Lady from 8:30 a.m.–8:55 a.m. featuring story telling and songs (WNYC Exhibit 72–81).

376. In the evening hours, WNYC broadcasts Youth in the City from 5:30 p.m.–6:00 p.m. on Saturday. This program is produced in cooperation with the City Department of Social Services and its Youth Services Administration. It reports work being done by the city to provide constructive outlets for economically deprived groups throughout the area (WNYC Exhibit 72–6, 72–7, 72–81, and 72–91).

377. Also during evening hours, at 9:00 p.m.–10:00 p.m. on Tuesday, WNYC, in cooperation with the Mayor's Office on University Affairs, broadcasts University of the Air (O.U.R. Reports) (WNYC Exhibits 72–6 and 72–7). Michael B. Goldstein, Assistant City Administrator, testified that University Reports endeavors to present a view of the emerging dynamic relationship between higher education in the New York metropolitan region and the various levels of governments, local, state, and federal.

378. WCCO submitted rebuttal evidence with respect to the direct testimony of Richard I. Pyatt and other WNYC witnesses regarding the uniqueness of or the need for WNYC's programs (WCCO Exhibit 72–30). This consists of a compilation of program material submitted in the 1972 renewal applications of a number of New York and New Jersey broadcasting stations, and a survey estimating WNYC listening audience as among the smallest in the New York City area. The programming disclosed by the compilation from the renewal applications indicate a listing, in the aggregate, of virtually every subject matter listed by WNYC. There is no indication, however, that this is accomplished in the degree and manner that is done by WNYC. This does not mean that the other stations are failing to meet their public service obligations, but merely that they do not meet the unusual standards of WNYC.

Conclusions on Issue 10

379. The disposition of this issue is complicated by two factors. First,

WCCO and the Bureau treat it in their proposed findings as if it were an ascertainment issue and subject to the so-called "Primer" requirements. *Community Problems by Broadcast Applicants*, 27 FCC 2d 650. Such approach is erroneous. Second, the issue was originally designated as Issue No. 7 and was explained by the Commission as being intended "to encourage the submission of evidence designed to facilitate an evaluation of the importance of WNYC's daytime and nighttime programming to residents to its primary service area, *in the light of competing available services;* . . ." (underscoring supplied) 8 FCC 2d 1047 (1967) Par. 11. Nevertheless, the Presiding Judge granted a motion to strike from WNYC testimony all references to the programs of other stations (Tr. 3520). The ruling was further explained: "the grant or denial of the WNYC application is based on the validity of the affirmative showing of what they do and what they proposed to do, not on the deficiencies of the other New York stations, . . ." and "[w]e have neither the time to go into an attempt to compare the programming, and unless it is established that the programming of these stations is either exceptionally good or exceptionally bad, it is not a decision that is of significance and I don't think [we can do that] and still get this case decided within a reasonable period of time" (Tr. 3526, 3527).

380. The disputed testimony did not contend deficiencies existed in the other stations but attempted to show that those other stations did not carry certain programs of the type or magnitude carried by WNYC which it contended were unique. As this would seem clearly to be the type of testimony sought by the Commission's explanation of this issue (formerly Issue 7), the present Presiding Judge feels that that ruling was in error. The ruling was reversed by a subsequent Presiding Judge (Tr. 8023) but this was after the close of that portion of the record. The subject was therefore not fully explored.

381. The ownership by the municipality of WNYC and its noncommercial operation are especially significant. The programming has been and will be determined for or in conjunction with various city service agencies. It serves as an adjunct to the police, fire, and other departments of the municipality. Its program emphasis is on public hearings, local news, special reports, and action interviews. Complete coverage of local elections and availability to numerous candidates is unique to WNYC. Its programming is not, however, wholly parochial as indicated by its United Nations and related coverage.

382. The WNYC preemption policy is a unique feature of its programming and of obvious importance to its citizenry. In a sense this can be described as "nonprogramming" in the usual meaning of that term, as it is an interruption of normal schedules. Nevertheless, its importance to the operation of a huge complex city such as New York is obvious.

383. WCCO presented a study prepared in 1972 of programming shown

in the current renewal applications of a number of stations in the New York City area. This study indicates these stations collectively proposed programming in virtually all the same categories as listed by WNYC. It did not establish, however, that any station proposed the same depth of coverage as WNYC, was operated as an adjunct of the city government, or provided the availability to the city government of the ready accessibility such an embraced in the WNYC preemption policy.

384. It is concluded therefore, that the past programming of WNYC is indicative of its proposed programming in the primary service area of its authorized and Special Service Authorization Areas (SSA) as well as of the proposed 50 kW operation; that such programming meets special needs and requirements of the municipality and the populations and areas which have been and are to be served; and that no other stations provide programming so closely coordinated with the municipal operations.

Issue 11

To determine whether or not there is any unusual and temporary need for the requested special service authorization, and if there is, the nature and extent thereof.

385. The findings made under Issue 10 apply equally to this issue. By their very nature, the WNYC operations provide a unique municipally-coordinated service to the primary service area populations not otherwise available. Many of the programs enumerated must continue beyond the daylight hours or remain incomplete.

Conclusions on Issue 11

386. For the reasons stated, there is a clear and imperative need for making the long-continued SSA operation permanent. The need, however, is for a permanent continuation of the 1kW SSA authorizations or so-called nighttime operations and for the proposed 50 kW operation. It is therefore concluded that there is no unusual or temporary need for the requested special service authorization.

Issue 12

To determine whether the City of New York Municipal Broadcasting System has adequately ascertained the needs and interests of the new areas proposed to be served by its 50 kW application.

387. The application for the 50 kW facility was filed by WNYC in March 1964. In 1968, the Review Board (11 FCC 2d 287) added the ascertainment issue[11] as to the "new areas" to be served by the 50 kW application (paragraph 8) pursuant to the then *Suburban* doctrine (30 FCC 1021),

[11] At the hearing, the ascertainment issue was erroneously attributed to the Commission's May 11, 1971 Order (Tr. 4426).

pointing out that some efforts in the outlying areas must be made and citing *Cosmos Broadcasting Corporation*, 5 FCC 2d 690, in this regard. It refused to add an ascertainment issue with respect to the present SSA areas covered (paragraph 6). Upon review of that Order, the Commission, in May 1971, also refused to add an ascertainment issue with respect to the SSA extension application (29 FCC 2d 244) finding that it was not required "in the usual sense contemplated by our *Primer*" which had been released February 23, 1971 (27 FCC 2d 650).

388. The WNYC ascertainment study (WNYC Exhibit 72–69) was introduced into evidence on January 17, 1972, but after the WNYC renewal applications were filed on February 18, 1972, it introduced its revised study (WNYC Exhibit 72–69A) and the amendment to its application submitting that study was granted by Memorandum Opinion and Order released April 18, 1973, FCC 73M–464.[12] The revision, WNYC Exhibit 72–69A, was said to be for the purpose of complying with the form of the *Primer* (Tr. 4635).

389. The ascertainment study is a compilation of the contacts made by the WNYC Program Director, which include telephone, personal and other types of contacts with city and other governmental units, with the general public and with representatives of various civic and business groups as later outlined. WNYC did not follow the procedure of the *Primer*, Q and A Nos. 9 and 10 by determining the composition of the areas to be served and then establish contacts with leaders of various groups.

390. In granting the amendment to receive the revised ascertainment study, (FCC 73M–464) the Presiding Officer suggested that WNYC "may wish to consider whether its ascertainment of the needs and problems" had been presented in accordance with *Primer* requirements (paragraph 11). WNYC thereupon prepared a further amendment submitting another ascertainment study WNYC Exhibit 72–69–1973. On July 10, 1973, the Presiding Officer orally accepted the amendment, provided for the filing of written objections thereto, and directed that cross-examination proceed on that exhibit rather than on Exhibit 72–69A. The following day, however, he reversed the ruling without explanation of record, and denied WNYC permission to appeal his ruling. The 1973 ascertainment study in question is an identified exhibit herein and is also appended to the WNYC Proposed Findings. WNYC vigorously urges acceptance of its Exhibit 72–69–1973 and contends it is fully in accord with *Primer* requirements. Due to the procedural consequences, no consideration is given to the possible reversal of the prior ruling.

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[12] The WCCO appeal of that order was dismissed by Review Board Order released July 10, 1973, FCC 73R–254, 41 FCC 2d 723.

391. WNYC unfortunately did not distinguish between its 1 kW SSA application and the new areas proposed to be served by the 50 kW station in its ascertainment studies and devoted its proposed findings on this issue to arguing the admissibility of its excluded study WNYC Exhibit 72–69–1973. Accordingly, the following findings with respect to the new areas have been culled from WNYC Exhibit 72–69A, other exhibits, and the testimony.

392. The gain area which WNYC proposes to serve can generally be defined as northern New Jersey, portions of Westchester County in New York, and portions of southeastern (Fairfield County) Connecticut (WNYC Exhibit 72–69A). The engineering data indicates the daytime primary service gain area from WNYC's 50 kW proposal, include portions of Westchester, Rockland, and Nassau counties in New York; Essex, Morris, Union, Bergen, Passaic, Middlesex, and Somerset counties in New Jersey; and portions of the Philadelphia, Pennsylvania, Trenton, New Jersey, and Stamford, Connecticut (Fairfield County) SMSA's, which have previously been defined. In addition, the areas and populations outside New York City that will gain presunrise and postsunset primary service from WNYC's 50 kW proposal are approximately the same. WNYC Exhibit 72–69A (Ascertainment of Community Needs) was prepared by or under the direction of Richard Pyatt, Program Director for WNYC.

393. No particular attempt was made to serve specific communities in the gain area as it was felt that there was no major city which WNYC would be mandated to serve. Rather, the approach was to seek out community leaders who might be aware of problems of more general application than simply those facing a single community and, where possible, to propose suitable programming to meet those problems.

Demographics Concerning WNYC's Gain Area Outside New York City

394. The applicant furnished demographic data regarding "the populations in counties which in part encompass WNYC's gain area" outside New York City as follows (WNYC Exhibit 72–69A, p. 4):

	NEW JERSEY				NEW YORK	CONNECTICUT
	Union	*Essex*	*Hudson*	*Bergen*	*Westchester*	*Fairfield*
Total Population	543,116	929,986	609,266	898,012	894,104	833,935
Median Age	33.3	30.6	32.8	33.0	32.9	30.7
# of Persons Aged 65 and Over	54,633	99,020	69,195	84,716	94,931	74,125

	NEW JERSEY			NEW YORK	CONNECTICUT
	Union	*Essex*	*Hudson*	*Bergen*	*Westchester*	*Fairfield*
Mean Family Income	$10,889	$12,898	$10,586	$15,852	$17,778	$16,604
% of Population with Income Below Poverty Line	6.1	13.1	11.9	4.1	6.2	6.2
% Unemployed						
Male	2.5	3.8	3.8	2.4	2.4	3.1
Female	4.2	5.3	5.9	4.4	3.0	3.5

395. Pyatt, WNYC's Program Director is of the view that the major problems facing New York City proper, such as problems of the aging and poor, similarly affect the entire greater metropolitan area. Furthermore, from the fact that in 1971, 550,000 persons working in New York City paid commuter earnings taxes, he considers the problems of New York City are of interest and concern to many inhabitants of the greater New York metropolitan area. These general observations, while perhaps true, were not supported by a specific ascertainment study in the 50 kW gain area.

396. Pyatt also contacted many state officials but did not delineate the areas or subjects about which the discussions were concerned and as state-wide functions are involved in many of the departments or offices represented, it cannot be determined if they involved the New York portion of the gain area.

397. Specific ascertainment contacts were made by WNYC, as follows:

Connecticut: Congressman Robert H. Steele, 2nd District and the aides of Congressmen Robert N. Giaimo, 3rd District, Stewart B. McKinney, 4th District, and Ella T. Grasso, 6th District;

New Jersey: Kazimier Wysocki, Mayor, Hackensack, New Jersey;

James L. Blankenship, Media Consultant, R.C. Auletta, Inc., of Jersey City, New Jersey;

Dr. Sanford Kingsley, D.D.S. of Milford, New Jersey, Chairman, Children's Dental Health Week of the New York-New Jersey metropolitan Area.

398. The programming of stations in the Connecticut and New Jersey adjacent areas were studied in preparing the proposed programming of the 50 kW gain area. Many of the programs are of obvious universal appeal such as Improving Life for the Handicapped, The Search for Mental Health, Eating for Health, Internal Revenue and You, United

Nations, Children Can't Wait, On the Housing Front, most of which are of a type that carried on any other stations, or only to a lesser extent. Other programs such as Election Countdown will be broadened to include interviews with New Jersey and Connecticut candidates for office; V.A. Today will be designed to reach the great number of veterans who reside in the suburban reaches in New Jersey, upstate New York, and Connecticut; and a weekly intellectual program from Drew University, Madison, New Jersey. Dr. Robert F. Oxnam, President of that University, complains, however, that the present WNYC signal does not reach New Jersey residents who receive poor reception. WNYC also expects to program to meet the needs expressed by representatives of American Red Cross, American Cancer Society, and Mercermedia, all located in Newark. Community Health, Education and Information, Department of Parks, Recreation and Conservation of Westchester County will participate in programs designed for that area. A Connecticut Citizens' action Group in Hartford and the staffs of the enumerated congressmen also indicate the need for programs in that area which WNYC will arrange if the 50 kW application is granted.

Conclusions on Issue 12

399. In the light of the so-called "Primer" (*Community Problems-Broadcast Applicants*, 27 FCC 2d 650) the WNYC showing is woefully deficient and could not, under any conceivable standard, be found in compliance therewith. By pressing only for admission of the excluded WNYC Exhibit 72–69–1973 in its proposed findings, WNYC apparently concedes its failure in this regard.

400. A broader question, however, is whether the record indicates that "some effort" was made to ascertain the needs of the "new" or "outlying" service area proposed, as contemplated by the Review Board when it added the issue, (11 FCC 2d 287) and hence "adequate" within the language of the issue as framed. Compare *WKYK, Inc.*, 37 FCC 132, 1 FCC 2d 1451, sustained in *Allegany County Broadcasting Corp.* v. *FCC*, 348 F 2d 778, cited by the Review Board. Subsequently, the Commission, in effect, affirmed the Review Board action (29 FCC 2d 244) and while it cited the *Primer*, which had been issued in the interim, it did not disclose an intent to require a more stringent test.

401. WNYC has made "some" effort to ascertain the needs and interests of the new areas proposed to be served by the 50 kW application but, quantitatively the effort was minuscular, extending only to limited contacts in nearby New Jersey and in Connecticut. Despite this deficiency, however, the granting of the 50 kW application, if the 1 kW SSA application is approved on a permanent basis, would accomplish two public interest objectives, i.e., in its city of license, WNYC's interference-free coverage will increase from 55.6 percent of population to 99.7 percent, as

to WCCO's present operation, or from 50.3 percent to 98.6 percent as to WCCO's proposed operation (see Issue 1). Secondly, the interference to WCCO's secondary service area would be reduced.

402. It is accordingly concluded that WNYC's ascertainment of the new areas to be served by the 50 kW application was adequate under the circumstances of this case.

Issue 13

To determine whether, and to what extent, WNYC-FM can be utilized to meet presunrise and postsunset needs and requirements of the areas proposed to be served by its 50 kW proposal and by the proposal contained in its application for extension of SSA.

403. WNYC-FM operates on a frequency of 93.3 MHz with an effective radiated power of 5.3 kW and an antenna whose center of radiation is at a height of 1220 feet above average terrain (WNYC Exhibit 72–108).

404. WNYC-FM's 70 dbu (3.16 mV/m) and 60 dbu (1.0 mV/m) contours were predicted in accordance with Section 73.313 of the Commission's Rules (WNYC Exhibit 72–108), which together with Section 73.311, provide in part, as follows:

§ 73.311 Field strength contours.

(a) . . . These contours indicate only the approximate extent of coverage over average terrain in the absence of interference. Under actual conditions, the true coverage may vary greatly from these estimates because the terrain over any specific path is expected to be different from the average terrain on which the field strength chart was based. Because of the factors the estimated contours give no assurance of service to any specific percentage of receiver locations within the distances indicated.

(b) The field strength contours provided for in this section shall be considered for the following purposes only: [none for comparison of AM and FM]

§ 73.313 Prediction of coverage.

(c)(1) In predicting the distance to the field strength contours, the F(50,50) field strength chart, . . . shall be used. The 50 percent field strength is defined as that value exceeded for 50 percent of the time. The F(50,50) chart gives the estimated 50 percent field strengths exceeded at 50 percent of the locations in decibels above 1 microvolt per meter. . . .

405. The 10.7 mV/m and 12.7 mV/m ground wave contours[13] for the applicant's 1 kW SSA operation were based on WNYC's 1957 proof of performance.

406. The 10.7 mV/m and 12.7 mV/m ground wave contours for the applicant's proposed 50 kW presunrise and postsunset operations were

[13] Objectionable interference caused by WCCO's present operation imposes a limitation of interference-free service to WNYC's 10.7 mV/m ground wave contour. The objectionable interference that would be caused by WCCO's proposed operation would impose a limitation of interference-free service to WNYC's 12.7 mV/m contour (WNYC Exhibit 72–108, p. 2).

predicted on the basis of measured conductivities and M_3 conductivities. Predictions were made in accordance with the provisions of Section 73.183 of the Commission's Rules and WNYC's proposed 50 kW presunrise and postsunset radiation pattern (WNYC Exhibits 72–101, 72–108, and 72–111; WCCO Exhibit 72–22).

WNYC-FM's Service

407. WNYC-FM's 3.16 mV/m computed contour, based on F(50,50) field strength curve, encompasses all of the land area of New York City, with the exception of a small area on the southwest tip of Staten Island (WNYC Exhibit 72–108, Figs. 1 and 2).

408. WNYC-FM's 1.0 mV/m contour similarly computed, is essentially circular with an average radius of 33 miles. The maximum radius of WNYC-FM's 1.0 mV/m contour is less than 35 miles in any direction. Consequently, the land area of WNYC-FM's 1.0 mV/m contour is somewhat greater than 2200 square miles, compared to the proposed 50 kW nighttime operation, which, to the normally protected 2.5 mV/m contour, includes 2093 square miles.

WNYC's 1 kW SSA Operation

409. WNYC's 1 kW SSA operation provides presunrise and postsunset service to less than half of the land area within New York City. The applicant's 1 kW SSA does not provide service to the land area outside New York City whether the limitation is that imposed by WCCO's present operation, i.e., to WNYC's 10.7 mV/m contour, or the limitation which would be imposed by WCCO's proposed operation, i.e., to WNYC's 12.7 mV/m contour. WNYC's 1 kW SSA operation serves 56 percent of the people of New York City within the aforementioned present 10.7 mV/m contour limitation and would serve 50 percent of the people of New York City within the aforementioned proposed 12.7 mV/m contour limitation. In contrast, WNYC-FM's unlimited time service (1.0 mV/m) contour encompasses all of New York City and extensive areas beyond New York City (WNYC Exhibit 72–108, Fig. 1).

WNYC's Proposed 50 kW Presunrise and Postsunset Operation

410. The land area included in WNYC-FM's 1.0 mV/m contour is greater than 2200 square miles. This area is, therefore, more than three times as large as WNYC's proposed 50 kW presunrise and postsunset 658 square mile 10.7 mV/m contour and just under four times as large as WNYC's proposed 570 square mile 12.7 mV/m contour (WNYC Exhibit 72–111, Fig. 6). In addition, with two minor exceptions, WNYC-FM's 1.0 mV/m contour entirely encompasses the land areas of the above 10.7 mV/m and 12.7 mV/m contours. WNYC-FM's 1.0 mV/m contour completely encompasses the land area of WNYC's proposed 50 kW presunrise and

postsunset 12.7 mV/m contour northeast of New York City. However, the FM contour falls short of the outer tip of the applicant's proposed 10.7 mV/m contour by about one-half mile. This latter area represents a land area of inconsequential size. WNYC-FM's 1.0 mV/m contour does not encompass all of the land areas covered by WNYC's proposed 50 kW presunrise and postsunset 10.7 mV/m and 12.7 mV/m contours south of New York City. The area that would be served within the aforementioned 10.7 mV/m contour and not within WNYC-FM's 1.0 mV/m contour is nearly triangular in shape with base and altitude dimensions of approximately 6.5 miles and 10.25 miles respectively, with a resulting area of approximately 30 square miles. Similarly, there is a nearly triangular area that would be served within WNYC's proposed 50 kW presunrise and postsunset 12.7 mV/m contour and not within WNYC-FM's 1.0 mV/m contour. The dimensions of the base and altitude of said triangular area are 5 miles and 9 miles respectively, with a resulting area of approximately 15 square miles (WNYC Exhibit 72–108, Figs. 1 and 2; WCCO Exhibit 72–22, Fig. 25B). Since the land areas of WNYC's proposed 50 kW presunrise and postsunset 10.7 mV/m and 12.7 mV/m contours are 658 square miles and 570 square miles, respectively, the portions of the land areas within said contours that receive service within WNYC-FM's 1.0 mV/m contour amount to approximately 95 percent and 96 pecent respectively. Moreover, all of the area which is outside WNYC-FM's 1.0 mV/m contour but within WNYC's proposed 10.7 mV/m and 12.7 mV/m contours is in Monmouth County, New Jersey, which is outside both the New York SMSA and the New York-Northeastern New Jersey SCA (WNYC Exhibit 72–102, Fig. 1; WNYC Exhibit 72–111, Figs. 6 and 9; WCCO Exhibit 72–20, Fig. 25B).

411. The City maintains a programming scheduled for WNYC-FM separate and distinct from that of WNYC-AM. Because only FM has sterophonic capability, the City uses its FM facility for live and recorded music programs and other educational and cultural programming (WNYC Exhibits 72–2 and 72–6). WNYC-FM also is subject to the City's preemption policy. Accordingly, at times when a number of simultaneous important public hearings are occurring, it uses its FM faiclities to carry what are traditionally considered AM programs. For example, on November 18 and 19, 1971, WNYC-FM was used to broadcast the public hearings being held by the New York State Gambling Commission on the question of legalized gambling. WNYC-AM at that time was broadcasting City Council hearings on scandals in the Municipal Loan Program (WNYC Exhibit 72–2). In another instance, on October 19, 20, and 21, 1971, the United Nations debate on the admission of mainland China was broadcast on WNYC-FM, while WNYC-AM was broadcasting hearings on the Municipal Loan Program on October 19, the Department of Corrections on October 20, and the Municipal Loan Program again on October 21. On

one day in November 1971, there were for broadcast consideration hearings by the City's Knapp Commission on alleged corruption in the Police Department, by the City Council on Discrimination of Hiring Practices Against Homosexuals, and by the United Nations. Even with the two broadcast facilities, one of the hearings could not be broadcast (WNYC Exhibit 72–6).

412. WNYC-AM and FM broadcasts cannot be satisfactorily interchanged. For example, Goldman Band Concerts occur every Friday and Sunday nights from 8:30 p.m. to approximately 10:30 p.m. They traditionally have been carried on WNYC-AM. During one season, four or five years ago (Tr. 3615), the concerts were planned for and carried on WNYC-FM. This precipitated immediate protests from the conductor and listeners who did not have FM sets and who looked forward to hearing these concerts on WNYC-AM (WNYC Exhibit 72–30). WNYC concurs with the observation by the Commission that only 20.7 percent of the automobile receivers produced today [February 1973] are equipped with FM tuners. It believes that the FCC observation that only about 15 percent of all receiver equipped cars in the Washington area have tuners would be approximately true of cars in the New York area as well (WNYC Exhibit 72–6). Listening habits would be disrupted and the public inconvenienced if the programming on WNYC-AM and/or FM were to be altered.

413. During the 1971 composite week WNYC-FM broadcast, on a noncommercial basis, music stereophonically for 90 hours and 59 minutes, 57.5 percent of its time on the air (WNYC Exhibit 72–77). This musical programming consisted of recorded classical music (52.6 percent), opera (2.5 percent), folk and ethnic music (0.8 percent), and live concerts (1.6 percent). During the week of May 9 to May 15, 1973 (168 hours total broadcast time), WNYC-FM broadcast music stereophonically for 109 hours and 35 minutes, 65.3 percent of its time on the air (WNYC Exhibit 72–78). This musical programming consisted or recorded classical music (54.2 percent), opera (3.9 percent), folk and ethnic music (1.6 percent), and live concerts (5.6 percent).

414. Live and recorded music programs, which WNYC-FM broadcasts stereophonically, are necessarily part of FM programming if utmost advantage of the state of the art is attained (WNYC Exhibit 72–2). All of the stereophonic concerts from around the country received from NPR are carried on WNYC-FM. This is not a decision of management of WNYC. It is dictated by the state of the art and stereophonic music.

415. One of the factors which allow WNYC to be the only station in the area to broadcast live stereophonic music on a regular basis is an agreement it has with the musician's unions in the City which allows the donation of performances. By this unique relationship, WNYC agrees to broadcast the concerts live and not to tape them for later broadcast. Thus, time available for broadcast is significant in order to capitalize on the

opportunity to broadcast live concerts. Except when the Metropolitan Opera is in season, which WQXR broadcasts monophonically on Saturday afternoon, on a week-to-week basis throughout the entire year, WNYC-FM and WNYC-AM are the only stations broadcasting on a regular basis, sometimes four to five times a week, live concerts from the various concert halls throughout the City.

416. During the 1971 composite week, WNYC-FM broadcast 16 hours, 49 minutes (10.6 percent of time) of Spoken Words and Readings and Foreign Language Drama (WNYC Exhibit 72–77). During the week of May 9–15, 1973, it broadcast 16 hours, 58 minutes (10.1 percent of time) of Spoken Words and Readings, Foreign Language Drama, and Instructional (WNYC Exhibit 72–78).

17. Also, during the 1971 composite week, WNYC-FM broadcast Children's Programs for 3 hours and 14 minutes (2.1 percent of time) and Around New York (Cultural Information) for 5 hours and 25 minutes (3.5 percent of time) (WNYC Exhibit 72–77). During the week of May 9 to 15, 1973, WNYC-FM devoted 4 hours, 30 minutes (2.7 percent of time) to Children's Programs and 4 hours, 25 minutes (2.7 percent of time) to Around New York (Cultural Information) (WNYC Exhibit 72–78).

418. Listings from the radio section of the *New York Times* for the period July 1, 1973 to July 7, 1973, were admitted as WNYC Exhibit 72–85. The listings present information as to 33 stations operating in the area, time of news broadcasts, and certain information as to leading events and highlights of the day. The listings for WNYC are noteworthy because of their frequency. For example, in the section dealing with "Leading Events" for Sunday, July 1, 1973, a total of 16 may be found. Of this 16, 2 note programs on WNYC-FM and 6 note programs on WNYC-AM. The frequency of listings for WNYC throughout the week is similar. Listings by this New York and national newspaper present broadcast information as to the programs of great significance.

419. Essentially during the AM SSA hours, WNYC-FM is broadcasting Sunrise Symphony, while WNYC-AM is broadcasting Travellers Timetable. The programs, and consequently the facilities of the two stations, are not fungible. In the evening SSA hours, WNYC-FM from 5:00 p.m.–6:30 p.m., for example, is broadcasting All Things Considered, a magazine format report of national newsworthy events from NPR. At this time WNYC-AM is reporting New York City News and Foreign Press Previews (WNYC Exhibits 72–6, 72–81, and 72–91).

420. WNYC-FM and WNYC-AM separately receive financial support from CPB. This financial support clearly is significant to the Municipal Broadcasting System and is contingent upon separate programming for WNYC-AM and WNYC-FM (WNYC Exhibit 72-6, p. 63). More important to the public interest, WNYC-FM is the only FM station in the entire New York–New Jersey–Connecticut metropolitan area which is a mem-

ber of NPR. Without WNYC-FM, the broadcast of NPR programs such as All Things Considered would be lost to this area. A representative of the corporation for Public Broadcasting (CPB) enthusiastically supports both applications.

AM and FM Services are Non-Fungible under FCC Rules

421. Although it is possible to compare average area of AM and FM broadcast operations, the service rendered to a given area by those two types of broadcast operations is not comparable due to the differences in propagation of AM and FM signals.

422. The areas within the WNYC proposed nighttime 50 kW and 1 kW SSA 10.7 and 12.7 mV/m contours are "primary service areas," as defined in Section 73.11 of the Commission Rules. With the high minimum levels of interference-free AM ground wave signals of 10.7 and 12.7 mV/m involved, satisfactory AM service will be provided to essentially all locations in these areas.

423. Although the WNYC-FM operation supplies high levels of signal intensity over the AM "primary service areas," the FM contours are based on F(50,50) field strength curves. Thus, under average terrain conditions, only 50 percent of the locations would receive the high levels of FM signal strength 50 percent of the time (WNYC Exhibit 72–108). This means that all of the people residing in the WNYC "primary services area" will not necessarily receive satisfactory service from WNYC-FM, since FM contours, as stated in the Rules, indicate only the approximate extent of coverage over average terrain and give no assurance of service to any specific percentage of location within the contours.

424. A Listening Estimate prepared by American Research Bureau (ARB) in April–May 1971, for the Corporation for Public Broadcasting (WNYC Exhibits 72–50 and 72–51),[14] indicates a Monday–Sunday listening ratio for WNYC-AM of 46 percent for WNYC-FM of 54 percent of the combined listeners. Another study was presented by WCCO (WCCO Exhibit 72–28), which indicated, for April–May 1973, a WNYC share of aproximately 55 percent to 45 percent for WNYC-FM of the combined listeners. WCCO also presented a study (WCCO Exhibit 72–26) which indicated a growth in the FM share in the new York radio market of from 17.5 percent in spring 1968 to 37.6 percent in spring 1973.

Conclusions on Issue 13

425. The computed service area of WNYC-FM is substantially larger than either the present 1 kW SSA of WNYC or the interference-free area of the proposed 50 kW station. While the actual reception capability of

[14] These were received as indications of ARB research but not for the truth of the facts stated (Tr. 3375).

WNYC-FM is not shown, even if it be assumed the entire computed area could receive the signal, a large segment of the New York area listening public would be unable to receive the municipally-sponsored noncommercial radio programming of the Municipal Broadcasting System absent FM receivers. Based on the WCCO study, this could be as high as 62.4 percent of the present combined listening public, without taking account of the fact that the present 1 kW SSA signal of WNYC reaches only about half of the city.

426. WNYC-FM, accordingly cannot reasonably be utilized to meet the needs and requirements of the areas proposed to be served by presunrise and postsunset areas served by the present 1 kW SSA or 50 kW proposals.

Issue 14

To determine whether there is a reasonable possibility that the tower height and location proposed by WCCO would constitute a menace to air navigation.

427. This issue was added by order released January 25, 1972, 33 FCC 2d 285.[15] The Federal Aviation Administration (FAA) was made a party to this proceeding, but the FAA neither entered an appearance nor participated herein in any way. The National Business Aircraft Association, Inc. (NBAA) and the Aircraft Owners and Pilots Association (AOPA) intervened and actively participated in this sole issue. These organizations represent "general aviation" i.e., private and business aeronautical interests as distinguished from scheduled common carriers serving the public. The State of Minnesota and WNYC, already parties to the proceeding, also participated in this issue.

428. Issue 14 was initially specified in the absence of a "no menace to aviation" finding. Subsequently, the FAA determined the tower would constitute a hazard.

Background of Proposal

429. Midwest seeks to relocate its antenna, built in 1939, from Coon Rapids (formerly Anoka), Minnesota, to a site approximately one mile southwest of the unincorporated community of Hamel in the city of Medina. Coon Rapids lies north-northwest of Minneapolis; Hamel is 13 miles away, northwest of Minneapolis. The relocation is necessitated by the unsatisfactory technical condition of the present site—due to restrictions upon (and even loss of) part of the ground system and the encroach-

[15] Judge McClenning presided over all conferences and hearing sessions relating to Issue 14 until he retired on July 31, 1975. Subsequent hearings from November 11 to 17, 1975, were presided over by Judge Frederick W. Denniston. Acting Chief Administrative Law Judge Chester F. Naumowicz, Jr., presided over two hearing conferences held in August and September 1975.

ment of increasing population—the site derogates from efficient coverage. At Hamel, a rural community, Midwest proposed to erect a Franklin Antenna (two half-wave lengths, vertically stacked) with a height of 1195 feet above ground level[16] (AGL), approximately 2195 feet above mean sea level (MSL). This height corresponds to the resonant length of the antenna and will enable station WCCO to improve its ground wave signal and its sky wave coverage. The existing antenna at Coon Rapids of 65 feet AGL and 1520 feet MSL will be dismantled.

430. Midwest previously had obtained land at Lino Lakes to the northeast of Minneapolis and sought FAA evaluation of the site. Opposition developed, including objections by NBAA, an intervenor in this proceeding. The Metropolitan Airports Commission, which operates the public airports within a 35 mile radius of the Twin Cities, objected on the ground that construction of a Franklin Antenna at Lino Lakes would interfere with its plans to extend the Anoka County Airport. As an alternative, Midwest, after finding other sites foreclosed to it, ultimately specified its instant site. Zoning authority subsequently was obtained.

Site-Airport Relationships

431. The site is located 19 statute miles to the northwest of Minneapolis-St. Paul International Airport (sometimes MSP) on a bearing of 303° true, and 10 statute miles to the west-southwest from the nearest airport, Crystal Airport, on a bearing of 256° true (WCCO Exhibit 72–43, par. 13, App. D).

432. MSP is the principal airport serving the Twin Cities and is essentially the sole area airport used by scheduled airlines. Large turbine-powered aircraft (over 12,500 pounds) in the area almost exclusively are based at MSP. The majority of small aircraft are based at satellite airports—Anoka County Airport, Crystal Airport, Flying Cloud Airport, Gateway North Industrial Airport, Lake Elmo Airport, St. Paul Downtown Airport (Holman Field), South St. Paul Airport (Fleming Field)—which ring the Twin Cities (WCCO Exhibit 72–43, par. 15, App. D).

FAA Evaluation

433. In 1972, the Great Lakes Regional Office of the FAA at Chicago (Regional Office) conducted a study of the proposal's aeronautical effects (Aeronautical Study No. 71–GL–898–03). This entailed an in-house analysis of the antenna's possible effect upon training flights and upon flight operations conducted under either Instrument Flight Rules (sometimes IFR) or Visual Flight Rules (sometimes VFR) and circularization of the

[16] Having been filed prior to January 20, 1975, an environmental impact statement under 47 CFR 1.1301 *et seq.*, is not required. *National Environmental Policy Act*, 49 FCC 2d 1313, 1355.

Regional Office's evaluation to aviation interests (NBAA Exhibit 41 and 53).

Criteria for Determining Obstructions to Air Navigation

434. The evaluation was conducted, pursuant to Part 77 of the Federal Aviation Regulations, and in accordance with guidelines set out in FAA handbook 7400.2A, *Procedures for Handling Airspace Matters.*

435. The Federal Air Regulations define any structure over 500 feet AGL as an obstruction requiring an aeronautical study. In an aeronautical study, the presumption is that a structure will have an adverse effect upon IFR operations if the structure requires any changes in procedures or minimum flight altitudes. Likewise, the presumption is that a structure will have an adverse effect upon VFR operations if any VFR flight would be required to change course or altitude incident to erection of the structure.

436. The FAA determination was made March 30, 1973, by the Great Lakes Regional office (NBAA Exhibit 41). The ultimate conclusion was that the proposed tower "would have a substantial adverse effect on aeronautical operations." Following request for review made by WCCO, the FAA affirmed the Regional Office action, on August 9, 1973, finding that:

> . . . both VFR and IFR would be adversely affected by the proposed structure and that its construction would have a substantial adverse effect on the safe and efficient use of airspace by aircraft. Consequently, the proposed structure would be a hazard to air navigation. (NBAA Exhibit 59).

No hearing was held by FAA and none was required under its rules unless determined by the FAA administrator [14 CFR 77.37(c)]. It is not of record whether Midwest sought a hearing pursuant to 14 CFR 77.41 in connection with its reconsideration request. No court or other appeal was pursued by Midwest (WCCO).

Site Description

437. Midwest proposes to locate the Franklin Antenna at a site with Latitude 45° 01′ 49″ N and Longitude 93° 32′ 25″ W southwest of Hamel, an unincorporated community. This site is situated in rolling terrain, has an average elevation of 1,000 feet and lies in an area which is zoned "residential-agricultural." Within a mile corn, hay, alfalfa, and beans are cultivated. To the north, there is a moderately populated area that extends into the community of Hamel and continues to State Route 55, a two-lane road. To the west and southwest, respectively, lie fields and a sparsely developed area. To the south, within approximately 2,000 feet of the site's center, is a cluster of residences. To the southeast, in the Holy

Name Lake area, there are a number of houses, within about 2,000 feet of the site.

438. Unless governmental prohibitions stand in the way, Midwest has decided, upon the recommendation of Captain Paul A. Soderlind, its principal aviation consultant, to strobe light the structure in daylight, or 24 hours a day if recommended by its consultant.

439. In 1972, three years prior to the Commission promulgation of the strobe-lighting provision, the City of Medina had issued a special use permit to Midwest, dated September 5, 1972, authorizing construction of the proposed antenna at Hamel, upon a number of conditions, including that (WCCO Exhibit 72–49):

> 6. Lighting of the Midwest facility shall[17] be in accord with appropriate federal and state regulations; however, if it is in accord with such regulations, only red lights shall be used on the tower and lighting of the ground area shall be shielded so as not be shone directly onto the neighboring properties.

440. WCCO will voluntarily strobe light the proposed tower and in accordance with any rules of the FCC requiring such lighting, or if none are issued, will attempt to get the use permit amended to allow it (Tr. 6071).

Area Weather

441. The basic methods of flight, Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) are affected by weather conditions. Three expert witnesses provided testimony as to such conditions in the Twin Cities and vicinity. Earl L. Kuehnast, the Minnesota State Climatologist, and Bruce F. Watson, a professional consulting meteorologist, testified on behalf of the state of Minnesota and Midwest, respectively. W. Boynton Beckwith, the System Manager of Meteorology for United Airlines, Inc., testified for intervenor NBAA.

442. Kuehnast has been the Minnesota State Climatologist since 1968. He has written on meteorology, and for 23 years (1943–1965) he served as meteorologist and pilot with the United States Air Force Weather Service, retiring with the rank of Lt. Colonel. His duties included service as the weather member of the Air Defense Accident Investigation Board. His responsibilities as State Climatologist include the study of Minnesota weather and climate as they relate to airport use, emergency notifications, and disaster relief (Minnesota Exhibit 3). While possessing flight qualifications, his testimony was offered by counsel for Minnesota solely on his capacity of a meteorologist. Moreover, he did not consult with or express the views of the Minnesota Department of Aviation.

[17] For reasons not apparent, WCCO misquotes this provision by employing the words "should [sic]" in each of the two instances where the word "shall" appears (WCCO Proposed Findings p. 18, par. 21).

443. Watson, a graduate meteorologist, is a professional consulting meteorologist in Minneapolis and a lecturer on climate and weather as well as the writer of a weekly syndicated newspaper column on meteorology. Approximately half of Watson's consulting work involves the study of meteorological conditions in the Twin Cities. He also has published a definitive study of Minnesota weather covering the period from 1819 to the present (WCCO Exhibit 72–40).

444. Save for a two-year absence as an employee of the United States Air Force and United States Weather Bureau, Beckwith has been employed in meteorological capacities by United Airlines, Inc. since 1936; he has been System Manager of Meteorology since 1965. His responsibilities include supervising the company's meteorological staff and advising United on meteorological matters relating to aircraft operations (NBAA Exhibit 14).

445. Weather measurements in the Twin Cities are made at Minneapolis-St. Paul International Airport (MSP), and Watson and Kuehnast and Beckwith each agree that climatological conditions at MSP have a high degree of good visibility weather conditions. However, the non-VFR flight conditions range between 2.6 percent of the time to 14.1 percent, the higher incidence being during the winter months. While Hamel and MSP are only 19 miles apart, Hamel has an altitude 150 feet greater than MSP, and Beckwith considers MSP low ceiling statistics tend to show a lower frequency of occurrence than actually occurs at the Hamel site. Local time and space patterns, known as mesoscales, are of concern to both VFR and IFR pilots, as they affect localized ceiling and visibility conditions. For example, curtains of snow in wintertime unstable air masses, while not covering large areas may require pilots on VFR to take evasive action or go on IFR. Such localized occurrences cannot be forecast and weather observers cannot report their existence beyond 3 or 4 miles (NBAA Exhibit 14).

446. The Federal Aviation Regulations (FAR § 91.105) impose minimum visibility requirements on VFR flights in controlled and in uncontrolled airspace. In controlled airspace a three (statute) mile minimum applies to a ceiling of 10,000 feet MSL, while a more liberal standard permits a pilot in uncontrolled airspace to fly with only one (statute) mile visibility (NBAA Exhibit 6).

447. Cloud ceilings affect VFR flying conditions, but 91 percent of the time the cloud ceiling in the area is 1500 feet (with three mile visibility). Therefore, the area as a whole enjoys 1500 foot ceiling and one mile visibility conditions in excess of 91 percent of the time. These conditions exist 93 percent of the time during the months of April through October, the period of heaviest local VFR operations (WCCO Exhibit 72–41).

448. Meteorological phenomena—thunderstorms, scud clouds, lifted

fog, and snow showers—momentarily can detract from such visibility. Watson analyzed these phenomena and concluded:

(i) the area is free of lifted fogs, or "scud clouds," 99.9 percent of the time (Tr. 10853);

(ii) based upon hourly observations at Minneapolis-St. Paul from 1945 to 1969, the area is free from thunderstorm activity for 99.3 percent of the total time, with 65 percent of the thunderstorms occurring between 6:00 p.m. and 5:00 a.m., CST. In any event, visibility remains at one mile or better during 90–99 percent of the time thunderstorms occur (WCCO Exhibit 72–70);

(iii) even a miniscule thunderstorm takes "at least 20 minutes . . . to develop," and during the representative ten year period 1954–1963, every thunderstorm in the area which reduced visibility to less than one mile was heralded by "at least 22 minutes of advance warning from precipitation." At night, the lightning in thunderstorms, makes it easily seen;

(iv) every thunderstorm at MSP during the ten year period came from the "westerly half of the sky."

449. MSP itself makes "observations quite a bit superior to most of the other National Weather Service stations" (Tr. 10906). Beckwith observed that MSP uses sophisticated weather radar equipment (WSR–57 model), with a maximum range of 250 nautical miles, which provides superior detection of rain, snow, thunderstorms, and other meteorological phenomena. The National Weather Service has positioned its WSR–57 radars so that "there is a slight overlapping from one radar station to the other, as far as the 250-mile range is concerned." The entire MSP area—including the regions to the west from which weather originates—is blanketed by other advanced weather sensing radar.

450. Weather information, whether originating from reporting stations or radar observed, is disseminated to pilots in the MSP area. Relay of information from the WSR–57 radar at MSP is virtually instantaneous, because the weather picture depicted on the primary NWS radarscope at MSP is reproduced on a repeater radar-scope maintained by the MSP Flight Service Station (FSS), which immediately transmits the weather data over "TWEB," a low frequency radio station. In addition, weather data over "TWEB," a low frequency radio station. In addition, weather information continuously is available from the NWS radio station, KEC 65, and to pilots who request it by radio.

451. Weather information from NWS reporting stations is communicated to MSP and other FSS offices via teletype circuit on a 24-hour basis. Included are hourly and multiple special weather observations—taken when meteorological or aeronautical conditions warrant—"so that . . . flight service station people are essentially up on the weather all the time." When short-term changes, known as mesoscales, occur time does not permit widespread dissemination, however, and this affects the small plane or general air traffic in particular.

452. All witnesses agree there is a high incidence of good visibility flying weather in the MSP-Hamel area, and that weather is a prime or controlling factor in determining the visibility of the proposed tower and resultant degree of hazard to VFR air navigation. During the relatively infrequent periods of poor weather it is possible for thunderstorms, snow showers, and other phenomena affecting visibility to occur at Hamel while not at MSP, and *vice versa*, despite the relatively minor distance between those points. Also, the slightly greater altitude of the Hamel site produces a corresponding reduction in the ceiling there in relation to MSP.

453. For approach and landing at the destination airport when ceiling and/or visibilities are limited, the pilot must follow a Standard Instrument Approach Procedure (SIAP). Such procedures specify particular courses and minimum altitudes for the approach. While departure and en route procedures are intended primarily to provide traffic separation, the approach procedures are designed to lead the pilot safely to the particular airport and/or runway under limited ceiling and/or visibility conditions. Although established by the FAA, such procedures are depicted on charts (commonly called "approach plates") produced by the National Oceanic & Atmospheric Agency (NOAA), or by the Jeppesen/Sanderson Company.

VHF Omnidirectional Range (VOR)

454. VOR stations transmit courses through the full 360 degrees around the station. The pilot, by setting his VOR selector to the desired course, and by centering his deviation indicator pointer, can fly along any course to or from the station. VOR stations operate on VHR frequencies and provide line-of-sight coverage; an airplane at 1,000 feet above the station normally will receive a usable signal within about a 40 mile radius. Scheduled weather broadcasts are given on VOR station frequencies at regular intervals. The pilot may also communicate directly with such stations for traffic, weather, and other information.

Distance Measuring Equipment (DME)

455. Distance measuring equipment in the airplane provides a direct read-out of the distance to the station to which it is tuned. DME transmitters are colocated with most VOR stations and with Instrument Landing Systems at some airports.

Instrument Landing System (ILS)

456. An ILS installation consists of a highly directional radio course (localizer) providing precise alignment with the runway, and another radio course (glide scope) providing a precise descent path to the runway, commonly at a 3° angle. The localizer course leading to the landing

runway from the primary direction is called "the front course." The runway used for approaches from the opposite direction is termed "the back course."

Expert Evaluation

457. The parties relied upon expert witnesses to evaluate the proposal from the aeronautical standpoint. Experts were called by the State of Minnesota, Midwest, NBAA, and AOPA. Testimony was given by airline captains, general aviation pilots, and air traffic experts.

Airline Captains

Captain Paul A. Soderlind

458. Paul A. Soderlind has been flying for more than 40 years, and has had a commercial pilot's license and instructor's rating since he was 18. He instructed in the Civilian Pilot Training Program until he was hired by Northwest Airlines, Inc. (Northwest), in 1942, as a First Officer and Instrument Flight Instructor. He subsequently became a line pilot, but his tenure was interrupted by military service in World War II. He returned to Northwest and in 1946, he became the nation's youngest airline captain, receiving the required CAA rating and Northwest's Captain rating (WCCO Exhibit 72–43).

459. During his 32 years experience, Captain Soderlind resided in the Minneapolis area and practically all his airline flying originated or terminated at Minneapolis-St. Paul International Airport. Captain Soderlind has a total of about 20,000 hours of flight experience as a pilot, including approximately 17,000 hours under VFR conditions. He has flown light aircraft in the MSP area for about 40 years. He also has 25 years of experience in observing the operation of traffic control centers and towers, including the facilities in the Twin Cities (WCCO Exhibit 72–43).

460. On October 1, 1954, Northwest appointed Captain Soderlind to the supervisory pilot position of Superintendent Flight Standards, which title was later changed to Director of Flight Operations–Technical. During his 18 years in this position, he managed all technical aspects of the Northwest flight operation, including:

Aircraft Operating Procedures
Engineering Flight Tests
Maintenance Flight Tests
Engine-Out Ferry Operations
Design of Cockpit Instrumentation and Layout

He instructed line pilots in flying Northwest aircraft and provided them with essential technical knowledge and information for that purpose (WCCO Exhibit 72–43).

461. In 1964, Captain Soderlind received the first FAA Citation and Gold Medal ". . . for extraordinary service to aviation." He is the only pilot to be so honored. In 1964 he also received awards from the Air Line Pilots Association and the Flight Safety Foundation for this contributions to aviation safety. In 1971, he received an award from the National Organization to Insure a Sound Controlled Environment for his work on anti-noise flight procedures. Captain Soderlind also has been cited by the Boeing Company, the McDonnell Douglas Company, Pratt & Whitney, and by the pilots of Northwest Airlines for his service to aviation safety (WCCO Exhibit 72–43).

462. Captain Soderlind discontinued active flying with Northwest in May 1973, and is now a full-time consultant serving varied organizations and authorities, including the Boeing Company, Cargill International, and Simmons Precision Products Corporation, which manufactures instruments and components for aircraft use. Captain Soderlind also recently served as a consultant to The Air Board in Louisville, Kentucky, and to the FAA.

463. Captain Soderlind made extensive examinations into aeronautical procedures and navigation aids in the Twin Cities area in his study of the proposed tower. He made flights in areas adjacent to Minneapolis for the purpose of observing and assessing the proposed site, the Shoreview television towers, training areas in the Twin Cities, the use of navigational aids, relevant airways and other pertinent matters. His study included discussions with general aviation pilots who flew in this area. He is of the opinion that the proposed WCCO antenna is compatible with safe IFR and VFR operations. Soderlind also challenged many of the FAA determinations underlying its basic conclusion the tower would constitute a hazard.

IFR Evaluation

464. In appraising the IFR effects of the proposal, Captain Soderlind analyzed all possible ramifications upon instrument procedures in the Minneapolis-St. Paul area. Among the factors upon which he relied were aeronautical changes in the area effectuated by the FAA subsequent to the 1973 opinion of the Regional Office.

Terminal Control Area

465. On February 28, 1974, the FAA established a Terminal Control Area in Minneapolis. A Terminal Control Area consists of airspace delineated by the FAA within which "*all aircraft* are subject to operating rules and pilot and equipment requirements specified" in various Federal Aviation Regulations. Among other things, the FAA provides positive traffic control within a Terminal Control Area.

466. The Minneapolis Terminal Control Area is circular and shaped like

an inverted wedding cake. It has a 20-mile radius and a ceiling (the base of the inverted cake) of 8,000 feet MSL. Throughout its entire circumference the Terminal Control Area is centered on Minneapolis-St. Paul International Airport. The floor of the first cylinder of the Minneapolis Terminal Control Area is at ground level and extends to a radius of 6 nautical miles. From 6 to 8.5 miles the floor rises to 2300 feet MSL; from 8.5 to 12 miles the floor is at 3,000 feet MSL; and from 12 to 20 miles the floor is at 4,000 feet MSL (WCCO Exhibit 72–43).

467. Under applicable rules and procedures, all large turbine-powered aircraft must operate at or above the floors of the Terminal Control Area when operating to or from MSP "[u]nless otherwise authorized by ATC [Air Traffic Control]. . . ." Captain Soderlind could recall no instance in which a waiver had been granted. Since (a) all air carrier turbine-powered airplanes and all but a minute fraction of executive jet fleet airplanes are governed by the requirement to operate at or above the Terminal Control Area floors, and (b) the Terminal Control Area floor in the Hamel area is 4,000 feet MSL, such flights would clear the top of the proposed antenna by a margin almost double that required by the Federal Aviation Regulations (WCCO Exhibit 72–43).

468. Air Traffic Control arrival altitudes are also a function of another supervening development—the FAA's "Keep-'Em-High" program, which was instituted subsequent to the FAA's Regional Office Opinion of 1973. Under that program, arriving high-performance aircraft are kept at the highest possible altitude to prevent mixture with uncontrolled aircraft in the vicinity.

469. The "Keep—'Em-High" program is used in the Minneapolis area with high performance aircraft being kept at 10,000 feet MSL until they are within about 30 miles of MSP. The program also effectively keeps high performance aircraft substantially above the Terminal Control Area's 4,000 foot floor at Hamel (WCCO Exhibit 72–43, par. 18, App. C).

Minimum En Route Altitude Increase

470. In 1973, the FAA Regional Office had found that the antenna would (NBAA Exhibit 41):

> 2.a. Increase the minimum enroute altitude (MEA) on Federal Airway V148 between the Minneapolis VOR and Mayer Intersection from 2800′ to 3200′ with the loss of a cardinal altitude.

"Cardinal altitudes" are those spaced at full 1,000 foot intervals (e.g., 3,000 feet, 4,000 feet, 5,000 feet). The FAA found that operations on a segment of federal airway Victor 148, would be raised from 2800 feet to 3200 feet MSL, and, consequently, the cardinal altitude of 3,000 feet would no longer be available on Victor 148 in the area. However, according

to Captain Soderlind, loss of the 3,000 foot cardinal altitude is of no operational significance as he finds there are numerous airway segments in the Minneapolis Terminal Area (as well as in almost all terminal areas) where such cardinal altitudes have been "lost" with no discernible or reported adverse consequences.

471. Captain Soderlind agreed that, provided the existing alignment of Victor 148 was preserved, the Franklin Antenna would require raising the minimum en route altitude on Victor 148 between Mayer Intersection and the Minneapolis VOR to 3200 feet. However, since the FAA itself had raised the minimum en route for large turbine-powered airplanes to 3,000 feet in 1974, the increase would be only 200 feet. He believes, however, that such an increase would be operationally insignificant because the Mayer-Minneapolis VOR segment of the airway is within the Minneapolis Terminal Area and is rarely used. In any event, the existing minimum en route altitude on Victor 148 between Mayer and Minneapolis VOR could be retained by a realignment of the airway. Such a realignment would add only about 0.6 mile to the airway distance between Redwood Falls and MSP and would take the airway over superior terrain from the viewpoint of a pilot of a single-engine aircraft.

Approach Procedure Altitude Increases

472. in 1972 the FAA Regional Office found that the antenna would have the following effects (NBAA Exhibit 41):

> 2.b. Anoka County Airport VOR, Runway 8 SIAP: 7 DME arc segmented R–159 clockwise R–265 increase from 2600′ to 3200′; procedure turn altitude increase from 2600′ to 3200′; MSA southwest quadrant increase from 2600′ to 3200′.
>
> 2.c. Crystal Airport, VOR-A SIAP: 7 DME[18] arc now segmented R–182 clockwise to R–346 at 2600′ would be changed to R–192 clockwise to R–240 at 3200′; increase MSA southwest quadrant from 2600′ to 3200′.

According to Captain Soderlind, raising the DME arc minimum altitude will have no adverse operational effect, because descent from the higher altitude will not result in descent paths steeper than 3°, the norm for ILS glide slopes. He also believes the ancillary references in the paragraphs to the Minimum Sector Altitude (sometimes MSA) also have no operational significance. The MSA is so rarely used that Captain Soderlind never has employed it in 40 years of piloting experience, nor has he ever heard of a pilot who did; therefore, a MSA increase from 2600 to 3000 feet, in one quadrant, would "absolutely" have no adverse effect on aeronautical procedures (WCCO Exhibit 72–43).

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[18] DME refers to Distance Measuring Equipment. SIAP means Standard Instrument Approach Procedure; MSA means Minimum Sector Altitude. A "quadrant" is 90° or one-fourth of a circle.

473. The FAA Regional Office also cited effects on approach procedures at Airlake Industrial and Flying Cloud Airports (NBAA Exhibit 41):

> 2.d. Flying Cloud Airport, VOR Runway 9L and VOR Runway 36: Increase the MSA in the 270°–360° quadrant from 2600′ to 3200′.
>
> 2.e. Airlake Industrial Airport, VOR-A: Increase the MSA in the 225°–315° quadrant from 2500′ to 3200′.

The minor increases in transition altitudes thus required would have no adverse operational effects according to Soderlind.

Visual Flight Rules (VFR) Evaluation

474. In Captain Soderlind's opinion, the antenna would be compatible with safe VFR operations in the Twin Cities even under adverse weather conditions. This opinion was based, in part, on his experience in flying over the Hamel area thousands of times in daytime and at night, in all types of weather.

475. Flights conducted at low altitude under limited ceilings and/or poor visibilities present the greatest exposure to collisions between aircraft and obstructions. The minimum allowable flight visibility under such conditions is one statute mile. With such visibility a pilot should readily be able to see and avoid an adequately marked and lighted structure. Pilots who fly under VFR are responsible for determining the locations and heights of such obstructions. A prudent pilot will have proper concern for his own safety and the safety of others and will make full use of current aeronautical charts to ascertain the height and location of significant obstructions, all of which are plainly marked and regularly updated (WCCO Exhibit 72–43).

476. According to Soderlind, a pilot has the responsibility to avoid hazardous weather conditions and a prudent pilot obtains weather reports and forecasts prior to departure and he obtains like reports and forecasts while en route (WCCO Exhibit 72–43).

477. A pilot's greatest problem would arise if he was "feeling his way" at low altitudes under low ceiling and/or visibility conditions and following a visual course over the ground. In such case a pilot would most probably use his VOR equipment for guidance. The majority of airplanes operating in the Minneapolis-St. Paul area, according to Soderlind, are equipped with VOR and adequate navigational information is available from the area VOR stations. He further explained that a pilot cannot fly in the Terminal Control Area without VOR equipment and that it is a rarity for a pilot flying VFR to eschew use of radio-navigational aids and to rely solely on "ground aids and his compass . . . dead reckoning navigation" (Tr. 6793). Rather, the pilot uses electronic navigational aids in conjunction with visual observation (WCCO Exhibit 72–43).

478. A pilot not utilizing VOR or other navigational aids must rely on ground features such as highways and rivers. The closest such feature to the proposed site is State Route 55 and an adjacent railroad track. Captain Soderlind disagrees with the private aviation witnesses that pilots flying from Kimball, Maple Lake, and Buffalo Airports (northwest of the Twin Cities) to satellite airports in the Twin Cities are likely to follow two-lane Route 55. In the Captain's opinion, while such procedure admittedly is possible, and no doubt occasionally occurs, it is illogical and unwise in marginal weather conditions since:

(ii) Several six-lane *freeways* lead from the northwest directly to or in close proximity to the satellite airports in question;

(ii) Route 55 and its adjacent railroad track are far less conspicuous and thus much more difficult to locate and follow than are freeways;

(iii) Route 55 does not lead directly or even in close proximity to any of the satellite airports in question.

In visibility of this "worst" value, a pilot necessarily would have to fly no more than a mile from Route 55 and would, in virtually all cases, fly substantially closer so that he could see the highway. Since the proposed site is more than a mile from Route 55, a collision with the antenna under such low visibility conditions would be highly unlikely (WCCO Exhibit 72–43).

479. Government air navigation charts long have shown WCCO's present location and frequency. Since station WCCO provides a clear channel omnidirectional 50 kW signal, day and night, on a low frequency (830 kHz), which extends far beyond the line of sight, the station constitutes an excellent navigational aid. Captain Soderlind personally has obtained accurate navigational bearings from WCCO hundreds of miles from the present antenna. Likewise, the Franklin Antenna can be used either as an aid in finding the airport of destination or in avoiding the antenna's vicinity—by keeping the pointer of the Automatic Direction Finder (ADF) "well off the nose." (An ADF is a radio compass which will point directly to the station to which its radio is tuned.) The new Franklin Antenna itself thus would enable pilots of radio equipped planes to avoid the structure as well as to help them in finding Crystal Airport. In Captain Soderlind's opinion, the strobe lighting of the Franklin Antenna at Hamel would make it "the [one] structure in the area that the pilot would be least likely to collide with or have a problem with" (WCCO Exhibit 72–43).

480. Moreover, the FAA recommends—and it is common sense practice—for pilots to make radio contact with the air traffic controller having jurisdiction over the area in question. The radarscopes in the MSP IFR Room presently display the location of the Shoreview towers, and it is standard operating practice for Air Traffic Control to alert pilots as to the

presence of the towers and to vector flights around or over the towers. This practice could be extended to the proposed antenna at Hamel.

481. From a VFR standpoint, Captain Soderlind concluded the aviation fraternity would benefit from relocating WCCO to Hamel, because the prospective structure is "less objectionable aeronautically than the present antenna which will be dismantled" (WCCO Exhibit 72–43). The Hamel structure would be a useful navigation guide with its strobe lighting.

Pilot Training

482. Captain Soderlind has trained hundreds of rank beginner pilots in various parts of the United States, including the Twin Cities area. He also has instructed hundreds of more advanced pilots.

483. Based on his experience of flying in the Twin Cities area, Captain Soderlind proposes an alternate training area which he considers superior and would enable flying schools to avoid the antenna area (WCCO Exhibit 72–71).

Captain Jerrol T. Frederickson

484. The only airline pilot other than Captain Soderlind who testified in this proceeding was Captain Jerrol T. Frederickson. He was called by NBAA.

485. Captain Frederickson resides in the Twin Cities and is employed by Northwest in the supervisory capacity of Director of Flying Operations. He has approximately 24,000 hours of flying experience and currently holds an Airline Transport Pilot Rating, with type-rating in multi-engine large aircraft and single-engine planes and as flight instructur. As Director of Flying Operations for Northwest, he has essentially the same responsibilities previously borne by Captain Soderlind.

486. According to Captain Frederickson:

(i) the aeronautical effects which the Regional Office found would have a "substantial adverse effect on aeronautical operations," would have very little effect on Northwest airline operations (Tr. 10675).

(ii) The raising of the various altitudes would have no effect on airline operations.

(iii) Erection of the tower would affect the minimum vectoring altitudes and this would possibly affect the airlines by slowing traffic. He approves of McDermott's testimony in this regard. The minimum vectoring altitude would be raised by 500 feet, but this would not effect Northwest.

(iv) FAA personnel who are planning the installation of new ILS equipment at the MSP airport have expressed concern as to the effect the radiations from the tower might have.

(v) He favors the antenna farm concept.

General Aviation

John Boynton Bean

487. John Boynton Bean testified on behalf of NBAA as an expert in general aviation and business flying. Bean is a resident of the Twin Cities area where he is a member of the Board of Directors of International Multifoods, Inc., an NBAA member. NBAA is a Washington headquartered organization whose members principally are corporations which use aircraft as a business tool and is an active opponent of the proposed tower.

488. Bean is a pilot with single-engine and multi-engine licenses and instrument and commercial ratings. His experience includes employment with Pan American Airways, Inc., from July 1941 to February 1944, as a fourth, third, second, and first officer. He flew as a co-pilot, but never attained a captaincy. he has a total of almost 5,000 flying hours; 430 are IFR and 4,500 are VFR. he flies VFR on the average of 150–200 hours in the Twin Cities area (NBAA Exhibit 23).

489. Bean considers the proposed tower to be a very substantial hazard. In his discussions with controllers in the MSP control tower he found they opposed the proposal as it would impose greater load on the controllers by being required to route air traffic around the tower and force both VFR and IFR traffic up into the TCA where the heavier aircraft are operating (Tr. 9726).

490. Bean has found that the recent establishment of the TCA has tended to increase the traffic in the Hamel area because many pilots elect not to pass through the TCA to avoid the 4,000 foot floor and they must remain west and northwest of the 3,000 foot floor which is about 5 miles east of Hamel (Tr. 9732).

491. Bean distinguished between the airlines and the non-pressurized planes. The former with multiple crew members and redundancy of equipment, can keep track of the demands of instrument flying and cockpit work load resulting from change in minimum altitudes. With the smaller non-pressurized planes, the increase in minimum altitude on various routes from 2,600 to 3,000 feet, while seeming insignificant, through the loss of the cardinal altitude of 3,000, would force traffic in the east semicircle to 5,000 feet, a difference of significance to the small plane pilot, from additional stress due to more rapid descent (Tr. 9793).

492. According to Bean, even light rain or snow reduces visibility. The Hamel area is heavily travelled by VFR traffic and there are two flag check points in the vicinity of Hamel on the MSP Terminal Control Area (TCA) map (Tr. 9805). Bean disagrees with the contention that the proposed tower would serve as a navigational aid in conjunction with ADF as there are other better aids and the ADF would be used only as a last resort (Tr. 9811). Less than half of the small planes are equipped with

electronic devices such as DME, encoding altimeters, ADF and the like, and these malfunction from time to time (Tr. 9839).

493. Bean concedes that strobe lighting improves the conspicuity of towers but believes it is overrated as to what it can do, particularly in deteriorating weather (Tr. 10052). When used on planes, for example, it sometimes must be shut off in precipitation or clouds because it can cause disorientation of the pilot (Tr. 10069).

494. WCCO sought to impeach the testimony of Bean because neither he nor his organization had opposed the Shoreview Antenna farm or the IDS structure, both tall structures in the area, nor was supporting efforts to have either the FCC or FAA prescribe strobe lighting. Such non-action by Bean does not lessen his credibility (Tr. 10064).

495. Bean was disturbed by representations made by WCCO representatives, who were seeking support for the tower application, that the loss of a small plane would be insignificant in comparison with the public benefits that would flow from the proposed tower (Tr. 10113).

496. In reply findings, WCCO seeks further to discredit Bean's testimony on the grounds that Bean, in expressing opposition to the FAA against the tower, suggested an alternative site as to which he had no engineering advice justifying the site, and that this constituted deception. The record cited, Tr. 9894–9898, does not justify this conclusion and the invalidation of the Bean testimony is not justified. Similarly, the effort of WCCO to justify rejection of all testimony of opponents on the ground of "prejudice, economic motivations, misinformation and misapprehension" must be rejected. That a party has an economic or other interest in the outcome, as does WCCO itself, does not justify erection of a wall of silence around all opposition.

Curtis O. Erickson

497. Curtis O. Erickson, a resident of the Twin Cities area since 1950, is president of Minnesota Aviation Trades Association and of Instrument Flight Training Inc., a FAA certificated flight school and air taxi commercial operator, located at Minneapolis-St. Paul International Airport. He testified on behalf of NBAA. Erickson has logged between 14,000 and 15,000 hours of flight time as pilot-in-command; 1500–1600 hours were spent in instrument flight. He has primarily flown in general aviation aircraft, namely:

Aero Commander	1210 hours
Beechcraft products	3014 hours
Cessna products	5293 hours
Piper products	7947 hours

The majority of the flying has been in the area of the Twin Cities, with a substantial portion devoted to flight instruction. Erickson holds an in-

structor rating, a commercial pilot certificate, a seaplane rating, and an Air Transport Rating. he has been designated a pilot examiner by the FAA. There are approximately 17,000 licensed pilots and over 4600 licensed aircraft in Minnesota (Tr. 8434), of which about 1100 are based in Hennepin County, in which Hamel is located (Tr. 8441). Nearly 4500 general aviation aircraft are based in Minnesota (Tr. 8447).

498. Erickson's flight school operates 15 aircraft and is one of the largest of 18 flight schools in Minneapolis-St. Paul. In the summer months (April through October), the school flies an average of 1100 to 1300 hours a month; from November to March the average drops to 800 to 850 hours. Except for ground track maneuvers, which are conducted at altitudes of 500 to 900 feet, primary type training by Erickson's school generally is conducted below 2500 to 3000 feet. Instrument students generally train between 3,000 and 5,000 feet except on approaches. He has given pilot training to about 100 airline flight engineers when they were required to obtain instrument ratings (Tr. 8437).

499. Erickson testified that the FAA has published no criteria governing the selection of training areas. Schools are free to pick and choose areas at will, irrespective of the training activities of other schools. In selecting the training area for Erickson's school, reliance was placed on landmarks which form highly visible boundaries. The training area was reported to the FAA and depicted on a poster in the "ready-room" of Erickson's school. The poster reflects that training in the Hamel area, about which Erickson testified, was primarily instrument training and cross-country flying. The proposed antenna would necessitate relocation to another training area, which would be costly.

Wallace C. Goodrich

500. Wallace C. Goodrich is director of Air Space Department of Aircraft Owners and Pilots Association (AOPA), an intervenor as to the air hazard issue. He has had extensive military and civilian experience in air navigatioin and the production of air navigation charts; he is also a private plane pilot with "low" hours. He or his predecessor performed the evaluation which led to AOPA objections to the FAA as to the proposed WCCO tower. His qualifications as an expert on aerial navigation and as an expert on obstruction evaluation were conceded (Tr. 8917).

501. AOPA filed written objections with the FAA, when the initial determination of hazard was being reviewed, because of the considerable VFR traffic transiting the Hamel area site from the general aviation airports in the immediate area, including Crystal, Flying Cloud, Anoka County, and St. Cloud, particularly student training flights. The position was also taken that the Terminal Control Area (TCA) then being considered and since prescribed, would result in a tremendous increase in the number of low altitude flights through the Hamel area by forcing VFR

pilots below the floor of the TCA. It considers the proposed tower a hazard to navigation even if equipped with high intensity (strobe) lighting as it is located on a VFR flyway, in the vicinity of or immediately adjacent to established training areas, its effect on instrument approach procedures and its effect on the minimum en route altitudes of an established airway.

502. Erickson's objections to the proposed tower are:

(i) the minimum en route altitude would be raised to 3200 feet on Victor 148 and for approaches at Crystal and Anoka County Airports;

(ii) the loss of the cardinal altitude of 3000 feet would raise it to 5000 feet on eastbound flights and 4000 feet on westbound flights (Tr. 8508);

(iii) an increrase in flight altitudes would cause icing problems, notably during the six months from October through March (Tr. 8508) and under certain conditions the icing is more severe:

(iv) the increase in minimum vectoring altitude represents a loss of usable altitudes to our air traffic system (Tr. 8511) and have the effect of forcing IFR traffic higher;

(v) at the present, training flights can be conducted under the TCA minimum altitude at Hamel;

(vi) the TCA has a strong tendency to force VFR traffic downward (Tr. 8517);

(vii) construction of the tower would tend to force traffic up into the TCA minimum (Tr. 8519);

(viii) several airports lie to the northwest, up Route 55, and his students and other pilots have followed the road as a VFR guide; he has followed Route 55 to Kimball in good weather conditions with scattered clouds and 10 to 20 mile visibility; in poor visibility he would follow the road rather than search for a superior guide (Tr. 8529);

(ix) in the outer fringes of the TCA in VFR conditions a pilot is responsible for keeping clear of obstructions; VFR is on a work-permitting basis under radar at VFR conditions; and there have been a number of controller declinations of vectoring service to VFR traffic (Tr. 8579);

(x) the proposed tower would be a severe hazard to light aircraft (Tr. 8632);

(xi) within the 20 mile circle of the TCA there are 13 airports of which 2 are restricted or private (Tr. 8670).

503. Of the smaller planes, less than 10 percent are equipped with DME equipment which indicates distance to a navigation station; in 4-place planes the percentage would be 25–30 percent; in the more sophisticated single-engine planes, 50–75 percent; and in the business aircraft, probably 100 percent. Such equipment is complex, requiring much maintenance, and is frequently out of service (Tr. 8546). About 90 percent of all light aircraft in the Twin Cities area are equipped with the VOR or Navcom which provides directional guidance in conjunction with two-way

communications (Tr. 8549). Due to inherent errors which can be caused by very small electronic malfunctions, many pilots, however, fly by ground guidance (Tr. 8580). The Automatic Direction Finder (ADF) is found in about 10 percent of the small planes; 40–50 percent in the next larger category; and 90–100 percent in the largest category (Tr. 8509). These, too, are subject to errors (Tr. 8570).

504. The tower would be on the extended center line of a major approach to the international airport, and there is presently a large amount of VFR traffic in the Hamel area (Tr. 8811).

Lee John Gilligan

505. Lee John Gilligan, a resident of the Twin Cities area, a pilot and the president of Crystal Shamrock, a flying school located at Crystal Airport, about nine miles from the Hamel site, testified on behalf of NBAA.

506. Gilligan is a pilot and commercial flight instructor, instrument rated, and for two years, he was a pilot examiner for the FAA. He has flown about 10,000 hours, of which 8,000 are VFR.

507. Flying clubs and four FAA certified flying schools (including his school) are situated at Gilligan's Crystal Airport and use the Hamel area for training, and has no alternative to this area. Construction of the antenna would compel him to move his training activities farther west, and such relocation would increase the prospect of students becoming lost, raise fuel bills, and injure Crystal Shamrock competitively (Tr. 9220). In addition to the 18 certified flight schools in the Minneapolis area, there are many flying clubs, of which there are four at Crystal Airport which are engaged in training (Tr. 9217).

508. Crystal Shamrock's training area is roughly described as a triangle from a point southeast of Minneapolis, westward along highway 55 to Crow Road and then northeast along Crow Road to the Mississippi River and then southeasterly along the river to the beginning. Hamel lies near the highway 55 boundary. Due to the activity at Anoka Industrial (also known as Gateway North), however, it has been forced to remain further south and the area now extends below highway 55 (Tr. 9251). If forced further west, greater flight time and fuel consumption will increase student costs and would hurt the competitive position of Crystal Shamrock (Tr. 9268). In marginal weather, it would be inappropriate to go west as the weather originates from that direction.

509. Gilligan also confirmed the effect the TCA will have in resulting in low-level flying to avoid it and the increase in traffic which has already occurred in the Hamel area as a result (Tr. 9274).

510. The TCA benefits aviation safety by giving the airlines, which use speedier clumsier aircraft, room for transition, and basically keeps the light airplanes separated. Encoding altimeters will be mandatory equipment in the TCA, and due to the expense, smaller aircraft will not be so

equipped (Tr. 9346). While strobe lighting is better than red and is especially effective in a completely black night, it becomes ineffective in haze and sunlight and an angled sun (Tr. 9349).

William S. Sadler

511. William S. Sadler, a resident of the Twin Cities, and a private pilot, with an instrument rating, testified on behalf of AOPA. Sadler has about 2,000 hours of pilotage experience in the Twin Cities, including 300 hours of IFR. He is the director of a company which makes emergency lighting equipment and makes frequent flights between Anoka County and Boulder, Colorado, on Victor 148 airlane. Due to delays in holding when in the controlled area, he frequently drops to a VFR altitude (Tr. 9492). This reduces the controllers' work load.

512. Altimeters are affected by barometric pressure changes and he has experienced a loss of 300 feet in altitude in a 12-minute flight (Tr. 9495).

513. Sadler was formerly chief engineer of KSTP-AM-TV in the Twin Cities and participated in the early planning of the antenna cluster at Shoreview and he collaborated in the construction of a TV antenna on top of a radio antenna. Sadler also participated in a study by the Metropolitan Airports Commission (MAC) seeking location for a new major airport in the area. One of the search areas involved is near the proposed WCCO tower site and construction of tower might prevent airport location in the Hamel area.

514. While strobe lighting is superior to conventional lighting, it is not a cure-all and is affected by atmospheric conditions (Tr. 9507). This was confirmed by a report of an accident where the pilot indicated fog made accurate depth and altitude perception difficult where strobe lighting was involved (Tr. 7620).

Air Traffic Specialists

Evans W. North

515. Evans W. North, a former FAA official and a pilot and navigator with 5,000 hours of flight time, testified on behalf of Midwest and evaluated the proposal from the standpoint of a specialist in aeronautical procedures. In North's opinion, the antenna will require only minor aeronautical changes of an IFR nature to assure safety, (WCCO Exhibit 72–46) and that there is no reasonable prospect the proposed structure will imperil safe air navigation.

516. North is counsel to a New York–Washington law firm which primarily handles aviation negligence matters. From 1958 to 1962 he was with the Enforcement Division, Office of the General Counsel of the FAA, achieving the position of its Chief; his duties involved enforcement of Federal Aviation Regulations, which required him to attain familiarity

with instrument approaches at airports and with the pre-flight activity and cockpit duties of pilots. From 1963 to 1971, he was Chief of Airspace and Air Traffic, Office of the General Counsel, FAA; he had oversight over rulemaking relating to airspace allocations and (domestic) Air Traffic Rules, and the current or prior versions of various Federal Aviation Regulations.

517. According to North, any structure or natural obstructions such as trees and mountains, may interfere with the free and untrammeled use of airspace by aircraft but in the light of FAA obstruction criteria, the antenna is compatible with safe aeronautical operations in the Twin Cities area. From an IFR viewpoint, the Franklin Antenna would require only minor procedural changes such as have been made elsewhere by the FAA to accommodate other structures. From a VFR viewpoint, the antenna would be conspicuous and avoidable (WCCO Exhibit 72–46). Based on one-day observations in 1973 and in 1974, he concluded that there is no VFR flyway along highway 55 (Tr. 7483). Another study prepared under his supervision over a six-day period in September 1973, (NBAA Exhibit 1) was interpreted by him to indicate that large type aircraft did not come within the "risk area"; that training flights are conducted on a daily basis from the north down to highway 55 but mostly not south of it; and that random flights of small planes went through the Hamel area. He therefore concluded the proposed tower would not have adverse effect on training flights in the area as the training schools must make accommodation by moving to other available training areas (Tr. 7486). The number of recorded flights over Victor 148 has declined; only three were recorded in the peak-day statistics for 1974 (Tr. 7824).

518. North summarized National Transportation Safety Board records of aircraft accidents finding 32 involving collision with electronic towers from 1969 through 1973 (WCCO Exhibit 72–47). A number of these involved collision with supporting guy wires rather than the towers themselves.

519. North contends the reasons advanced in the FAA determinations were wrong, that the introduction of the Terminal Control Area (TCA) subsequent to original FAA evaluation changed the situation. His objections and a study he had made were presented to FAA personnel at a private meeting, together with WCCO counsel, in September 1973, but the FAA has not changed its determination nor answsered certain questions he posed (Tr. 7779).

520. North agrees that:

(i) an increase in the Minimum En Route Altitude on Victor 148 (from 3000 to 3200 feet MSL) will have to be made but contends it is of no operational significance (WCCO Exhibit 72–46).

(ii) an increase will be required in the Minimum Sector Altitude to 3200 feet MSL but this will have no operational significance (WCCO Exhibit 72–46);

(iii) an increase in the DME arc to 3200 feet MSL in flying an approach to Crystal or Anoka County Airports is required but will not impose an operational burden upon either pilot or FAA controllers; the DME arc generally is unnecessary because controllers utilize radar vectoring to steer pilots to final approach courses (WCCO Exhibit 72–46, par. 20);

(iv) the antenna would not endanger aircraft utilizing Route 55 and the adjacent railroad tracks for VFR navigation, because the antenna will be strobe lighted—which will make it visible and avoidable by pilots.

Francis M. McDermott

521. Francis M. McDermott, an aeronautical consultant, was called as a witness by NBAA on two separate occasions, February 10, 1975 and June 23, 1975. McDermott was with the CAA-FAA from 1946 to 1960. Commencing in 1946, he was involved in control of en route traffic, advancing to the position of watch supervisor. Thereafter, he was in research activities for CAA-FAA, as technical advisor to the director of research. He left the FAA in 1960, to become executive director of the Air Traffic Control Association. Since 1961 he has been a consultant, including matters of air traffic control and analyses of applications for tall towers. His qualifications as an expert on obstruction matters as a non-pilot were conceded (Tr. 9082).

522. Tower controllers typically issue approach and departure clearances, and vector aircraft for approaches and departures. McDermott's duties with the FAA did not include work in the airport cab, from which controllers directly see aircraft, or in the terminal area IFR room, where controllers observe aircraft on radar screens. He worked in the air traffic center which controls en route air traffic by radio conversation and radar observation (Tr. 10584–10585, 10608).

523. McDermott considers the proposed tower to be a hazard, based upon FAA criteria, for the following reasons:

(i) increase the Minimum En Route Altitude on Victor 148 to 4000 feet, produce traffic congestion and impose a burden upon air traffic control (Tr. 9095).;

(ii) result in the loss of a cardinal altitude, requiring IFR traffic to be accomodated at higher altitudes and result in the first usable altitude of 5000 feet on certain airways for DME approaches (Tr. 9096);

(iii) result in the increase of a Minimum Sector Altitude (MSA) which provides 1000 feet clearance over the tallest structure in the quadrant served by the navigational aid (Tr. 9097);

(iv) increase the minimum vectoring altitude to 3200 feet in the northwest quadrant and, in turn, increase the altitude at which traffic moves;

(v establishment of the TCA has required small planes either to equip with sophisticated, expensive equipment or exodus to the outlying airports.

524. McDermott analyzed an FAA 24-hour study made on May 22, 1975,

which indicated that 255 aircraft on IFR flights were below 3200 feet MSL in utilizing the northwest quadrant at MSP. These results confirmed his judgments as to the effect of the proposed tower (Tr. 10578; NBAA Exhibit 63A–D). In his preliminary analysis of the January 25, 1975, accident involving the American University Towers in the District of Columbia, transcripts indicated the pilot may have utilized an incorrect altimeter setting given another plane and that the air controllers failed to advise the pilot he was at an unusually low altitude. He also noted that the Professional Air Traffic Control Organization has taken the position that controllers are not responsible for issuing terrain or obstruction clearance warnings (Tr. 10605), a position refuted by the FAA (Tr. 10659).

James E. Grambart

525. James E. Grambart, a pilot with 1080 hours of VFR experience, and a former air traffic controller, who now is a free-lance writer, testified on behalf of Midwest (Tr. 11139).

526. Grambart was with the CAA-FAA for 30 years, beginning as a trainee controller at Richmond, Virginia, in 1943. He was a controller or senior controller at: Bangor, Maine; Presque Isle, Maine; Charleston, West Virginia; and New York, New York (LaGuardia and Kennedy Airports). He served in the tower, including ten years in the LaGuardia Airport tower, and handled all phases of terminal control, including approach control, departure control and radar monitoring of ILS approaches and departures (Tr. 11050).

527. From 1969 until his retirement in 1973, Grambart was assigned to the FAA's National Aviation Facility Experimental Center (NAFEC). At NAFEC, Grambart participated in research projects relating to air traffic control, including:

(i) analysis of the stress controllers undergo at high density facilities (Tr. 11073);

(ii) analysis of means of improving airports in terms of runway configuration and controller work load (Tr. 11074).

528. Grambart has studied controller work load and operations at both centers and towers, and he has studied such matters as the effectiveness of radar at terminal facilities. His observations of tower controllers involved numerous airports throughout the United States. His observations of center controllers included the following centers (Tr. 11077): Boston; Denver; Los Angeles; Minneapolis; New York; and Washington, D. C. The purpose of these observations was the evaluation of (Tr. 11145):

(i) the work load at high density facilities;

(ii) traffic movement;

(iii) radar consoles.

529. Grambart visited the Trancon at the Minneapolis Center for three days in October 1975, to determine (Tr. 11154):

(i) the usage of Victor 248;

(ii) the altitudes at which en route center controllers relinquished and obtained control over aircraft in dealing with terminal airport controllers.

530. Grambart testified:

(i) raising the MEA between Mayer intersection and the MSP-VOR to 3200 feet would have no impact whatever (Tr. 11219);

(ii) if Victor 148 were realigned so that the proposed antenna would be outside the airway boundary, it would not be necessary to raise the MEA above its present value (Tr. 11223) and the work load of controllers would not be increased (Tr. 11239);

(iii) the changes required by the initial FAA Determination of Hazard Nos. 2(b) and (c) would not increase controller work load (Tr. 11239);

(iv) his observation of the use made of Victor 148 at Minneapolis-St. Paul during two hours disclosed no use of the airway, not even crossings (Tr. 11240);

(v) during his period of observation at Twin Cities airports, radar vectoring to final approach occurs at 4000 feet MSL; generally there is no holding of aircraft—they are vectored straight in (Tr. 11225);

(vi) Minneapolis ATC would vector aircraft around the Franklin Antenna if it were identified as a prominent obstruction on the radar overlay. Such vectoring is standard operating practice in towers and Grambart has observed this practice at Minneapolis—controllers routinely advise aircraft of any risk of collision (Tr. 11294);

(vii) while it would increase the controllers' work load, such vectoring would not impose a burden upon Air Traffic Control or have an adverse effect upon the flow of traffic; the flexibility of radar control would permit operations to continue unimpaired (Tr. 11272);

(viii) the creation of a cylinder with a 3-mile radius from the proposed antenna at Hamel would impose no burden upon Air Traffic Control. The antenna would not significantly complicate any traffic control. Grambart's 10 years of experience at LaGuardia Airport in New York demonstrated that even the New York skyline, a few miles from LaGuardia, never posed a problem to Air Traffic Control (Tr. 11366);

(ix) the antenna would not constitute a hazard to air navigation (Tr. 11400–11402);

(x) strobe lighting increases conspicuity (Tr. 11270).

Conclusions on Issue 14

531. The proposed WCCO antenna will be located at a site about one mile southwest of the unincorporated community of Hamel in the city of Medina, Minnesota (generally referred to as the Hamel site herein). The

Franklin Antenna will be 1195 feet above ground level (AGL) or approximately 2195 feet above mean sea level (MSL). The structure will be supported by a series of guy wires ranging up to 830 feet from the base.

532. During the course of the hearings, pursuant to a decision of its Executive Committee made in November 1974, management witnesses have committed WCCO to strobe (high intensity) lighting of the antenna excluding the guys. Subsequently, the Commission amended its regulations [*High Intensity Lighting of Antenna Structures*, 54 FCC 2d 30 (1975)] to provide for high intensity lighting (Section 17.42) in addition to so-called conventional lighting (Section 17.31). In its decision, the Commission stated, among other things: "The Commission must reserve the right to require strobe lighting in those instances where there would be no alternative but to deny the construction of the proposed tower."

533. The special use permit issued by the city of Medina for the construction of the Hamel tower includes the following condition:

> 6. Lighting of the Midwest facility shall be in accord with appropriate federal and state regulations; however, if it is in accord with such regulations, only red lights shall be used on the tower and lighting of the ground area shall be shielded so as not to shine directly onto the neighboring properties.

534. The Great Lakes Regional Office of the Federal Aviation Agency (FAA) on March 30, 1973, issued a Determination of Hazard to Air Navigation under 14 CFR, Part 77, in which it was concluded the structures would have a substantial adverse effect on aeronautical operations. On April 27, 1973, counsel for WCCO requested review by the Administrator, and on August 9, 1973, the Determination was affirmed on behalf of the Administrator. A further effort to obtain reversal was made at a private meeting between WCCO and FAA representatives in September 1973, but FAA has not changed its position.

535. The Hamel site is 19 statute miles northwest of Minneaplis-St. Paul International Airport (MSP), and is 16.2, 13.8, and 11.5 statute miles, respectively, from Anoka, Flying Cloud, and Crystal Airports. It is approximately one and one-half miles south of highway 55 and parallel railroad tracks.

536. Subsequent to the addition of this issue (33 FCC 2d 285, released January 25, 1972), the FAA established a Terminal Control Area in Minneapolis on February 28, 1974, centered on Minneapolis-St. Paul International Airport (MSP). This requires large turbine-powered airplanes (over 12,500 pounds) to operate at or above the floors prescribed under IFR rules. For a radius of six miles the floor is ground level; from 6 to 8.5 miles the floor is 2300 feet MSL; from 8.5 to 12 miles it is 3000 feet MSL; and from 12 to 20 miles it is at 4000 feet. Thus, at the Hamel site, the minimum altitude of controlled IFR flights of the larger aircraft, gener-

ally the commercial airliners and executive jets, is 4000 feet MSL or a clearance of 1805 feet above the proposed tower.

537. Also, subsequent to the FAA Determination, that agency has instituted a "keep-'Em-High" program designed to keep high performance aircraft at the highest possible altitudes to aid in separating the controlled from the uncontrolled traffic around airports. WCCO witness Captain Soderlind considers these two developments have "mooted" some of the aeronautical effects found by the FAA. However, Soderlind and other WCCO's witnesses acknowledge some changes in aeronautical procedures would be required by the erection of the tower. They consider these changes to be minor or of no operational significance, however, and disagree with the FAA conclusion of threatened hazard. Witnesses representing the private or small plane groups consider all the FAA findings as valid even after the changes, or in any event that the remainder justify the hazard finding.

538. The FAA findings of aeronautical effects which WCCO witness Soderlind agreed would result are:

2(a) Increase the minimum en route altitude (MEA) on Federal Airway Victor 148 between Minneapolis VOR and Mayer Intersection from 2800 feet to 3200 feet with the loss of a cardinal altitude [full 1000 foot intervals].

2(b) Anoka County Airport VOR, Runway 8 SIAP: 7 DME arc segmented R–159 clockwise R–265 increase from 2600 feet to 3200 feet; procedure turn altitute increase from 2600 feet to 3200 feet; MSA southwest quadrant increased from 2600 feet to 3200 feet.

2(c) Crystal Airport, VOR-A SIAP: 7 DME arc now segmented R–182 clockwise to R–346 at 2600 feet would be changed to R–182 clockwise to R–240 at 3200 feet; increased MSA southwest quadrant from 2600 feet to 3200 feet.

2(d) Flying Cloud Airport, VOR Runway 9L and VOR Runway 36: Increase the MSA in the 270°–360° quadrant from 2600 feet to 3200 feet.

2(e) Airlake Industrial Airport, VOR-A: Increase the MSA in the 225°–315° quadrant from 2500 feet to 3200 feet.

539. As noted, Soderlind contends these changes are of no significance. As to the following, he disagrees:

2(j) The structure would be located within approximately one mile of state highway 55 and a railroad track which parallels the highway from Hamel to the northwest, and would adversely affect aircraft utilizing these two landmarks for VFR navigation.

As to the latter, Soderlind is of the opinion there are several not-distant freeways which could better serve as a visual guide.

540. Captain Soderlind also accepts that the student training area which is utilized by a number of flying schools, must be moved to an area

which he has selected which he feels is superior to the existing one in any event, but which the training schools do not support.

541. Finally, Captain Soderlind as well as other witnesses in support, condition their testimony on strobe lighting of the structure in the event it is constructed. The evidence is overwhelming that strobe or high intensity lighting greatly improves conspicuity. It also demonstrates, however, that (1) it is not a cure-all and is less effective in snow, fog, and mist and (2) in adverse weather, light diffusion can cause disorientation of pilots. For example, when mounted on planes operating in fog, it is sometimes necessary to shut the lights off to prevent harmful effects due to diffusion. While the area has a high degree of excellent flying weather, there are low visibility conditions up to 9 percent of the time.

542. As there has been no amendment of application No. BP–19151 to incorporate the strobe-lighting feature,[19] full details of the proposal are not of record. The officer testifying of the plan in November 1974, indicated it would be used only in the daytime unless recommended for 24-hour service by its consultants, and that in view of the condition of the use permit, it might have to go back to the city of Medina for modification. In its brief, however, WCCO argues that in view of the FCC regulations on strobe lighting, it now possesses requisite authority under the terms of the Medina permit.

543. The conventional red lighting of antenna structures 1950 to 2100 feet in height is covered by FCC rule 47 CFR 17.37. High intensity lighting of antenna structures (skeletal) of over 1000 feet is specified in 47 CFR 17.42. The latter is subject to the Note preceding 47 CFR 17.39 as follows:

> NOTE: When authorized by the Commission, high intensity white obstruction lighting will be used in lieu of obstruction marking and lighting specified in §§ 17.23 through 17.37.
>
> * * *
>
> Where a dual lighting system is employed, i.e., high intensity white obstruction lighting during daylight and red obstruction lighting at night, ... (underscoring supplied)

The underscored phrases indicate an apparent contradiction in that conventional vs. high intensity lighting appear to be mutually exclusive (in lieu of) and also compatible (dual lighting system). There is also apparent inconsistency between the rules proper and the Commission's rationalization in *Antenna Structures,* 54 FCC 2d 30 (1975) by which Section 17.42 was adopted.

[19] Compare 47 CFR 1.65 and 1.514. It does not appear, however, that the application form requires specification of lighting.

544. In the latter report, the Commission stated, *inter alia*, that the rules would apply "primarily to new structures w[h]ere FAA has determined that increased conspicuity is necessary . . . " to existing or proposed structures where conventional lighting had been specified but where "upon request of the applicant the Commission *approves* the installation of high intensity lighting as an *alternative* thereto." But while thus speaking in terms of approval of an "alternative" (suggesting mutual exclusivity) in the succeeding paragraph, in speaking of possible preference by applicants as to the method to be used, also stated:

> Although the applicant may in each instance express a preference, in the final analysis the Commission reserves the right to *prescribe* the appropriate method *with due consideration given FAA's recommendations concerning safety to air navigation.*

545. This review of the background of the regulation is required to determine the meaning of the Medina use permit for the proposed tower. As Sections 17.31 and 17.42 are alternative "authorizations," it would appear that the *proviso* of the use permit applies and that strobe lighting is precluded. On the other hand, if the Commission should *require* strobe lighting, apparently this would nullify the proviso and bring the tower into accord with that condition.

546. On the other hand, FAA recommendation based on the strobe-lighting possibility is absent and, so far as the record discloses, WCCO did not re-present the hazard or lighting questions to that agency after deciding to adopt strobe lighting on its own initiative during the November 1974 hearings. The strobe-lighting question, however, is crucial to the testimony of the witnesses supporting the erection of the tower as they conditioned their advocacy on that as a condition of the proposal. Absent strobe lighting, the effectiveness of their testimony is nullified.

547. It is recognized that the Commission itself must reconcile any ambiguities in the lighting regulations. Nevertheless, the following conclusions are reached:

548. Unless the FCC *requires* high intensity or strobe lighting of the tower, the terms of the use permit of the city of Medina does not authorize that type of lighting.

549. Lacking an FAA recommendation on the subject, the FCC will not require strobe lighting in view of its statements in *Antenna Structures*, *supra*.

550. In view of the heavy reliance placed on strobe lighting by the proponents' witnesses, in the absence thereof, there is reasonable possibility that the proposed tower would constitute a menace to air navigation.

551. If it be assumed, nevertheless, that strobe lighting is allowed under applicable use permit, the following additional conclusions are reached:

552. It is conclusively established that the construction of the proposed tower will require changes in the aeronautical procedures enumerated above and the removal of training flights from the area.

553. The testimony of Captains Soderlind and Frederickson, commercial airline pilots of exceptional qualifications, establish that the effect of required changes on the large commercial airlines will be insignificant. It should be noted, however, that Captain Frederickson is opposed to the construction of the tower and advocates its placement in the Shoreview TV Farm area.[20]

554. The impact of the proposed tower will be more pronounced on the small plane and training school traffic. The latter must move from the area as it will no longer be safe for planes engaged in training and not generally equipped with sophisticated electronic devices to operate. Traffic to and from satellite airports, especially Anoka and Crystal Airports, will be affected.

555. While some witnesses, based on limited observations questioned actual use of Victor 148 airway and of highway 55 as guide, it is clear that there is substantial use of each.

556. The State of Minnesota strongly supports WCCO. Its then Governor, Wendell R. Anderson, testified in support and concluded that WCCO "is incredibly valuable to the State of Minnesota." Its position is that no menace[21] is threatened and that the only persons who will be inconvenienced are the few who fly their own planes for recreation or business.

557. The proposed tower presents not only a "reasonable possibility" of constituting a menace[22] to air navigation but in fact would be one. Adopting the construction placed on the term in *Streets Electronics, Inc.*, 20 FCC 1121, 1159, affirmed 21 FCC 540, that a menace would exist only if the tower would be an "unreasonable" hazard to aviation; a hazard which aviation cannot be safely required to accept, this conclusion is inescapable.

558. In view of the divergence of opinion expressed by the well-qualified small plane pilots and flight instruction schools, it cannot be found that it

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[20] A group of towers about 12 nautical miles North by East of MSP, the highest being 2375 feet MSL, which FAA has authorized to increase to 2649 feet. It has apparently not been designated an antenna farm area by the FCC under 47 CFR 17.8. A number of opposing witnesses urged that the WCCO tower be located in that area, expressing apprehension that its approval outside that area would lead to a proliferation of tall towers in the general area. Lacking an alternative site issue, the matter was not explored. WCCO contends, however, that "technical" reasons prevent it. It is noted that in its initial evaluation January 17, 1972 (NBAA Exhibit 53) the FAA noted that WCCO had indicated a willingness to locate in the Shoreview area, provided there was a 3-mile separation from the TV towers.

[21] As higher authority, the Governor overruled the position of the Minnesota Department of Aeronautics.

[22] Menace—1. a threat or threatening. 2. anything threatening harm or evil (*Websters New World Dictionary*).

presents a reasonable hazard which aviation can accept, and as the burden was placed on WCCO on this issue, its case must fall.

Discussion on Issue 14

559. This case squarely presents the issue of whether the FCC should flatly overrule the FAA in considering the aviation safety aspects of the public interest. No clear precedent can be found for such an action.

560. Both WCCO and the Broadcast Bureau rely heavily on *Streets Electronics, Inc., supra,* the KGEO-TV decision. That case, decided before the creation of the Federal Aviation Administration (FAA), involved a completely different factual situation. It was there stated, in part:

> As above shown, the proposed tower would be located at a site outside of all existing airways, . . . No modification or realignment of existing airways would be necessitated by the proposed tower height at the proposed site; no airfield approach procedures would be affected or modified; nor has any evidence been presented of a convincing character that existing minimum en route altitudes on established airways would be raised or affected because of the proposal.
>
> * * *
>
> . . . The facts with which this proceeding is concerned is the erection of one tower in an area remote from airfields, airports, and outside of established airways. . . . (at page 1164)

The exact opposite is true of the facts in this case. Moreover, the FCC there *upheld* a determination of no hazard which had been made by a Regional Airspace Subcommittee (an inter-agency group), and refused to find existence of menace or hazard.

561. While, in *Beacon Broadcasting System, Inc., et al.,* 34 FCC 872 (1963), a hazard determination of a Regional Airspace Committee disapproving a proposed 305.5 foot tower was overruled and a finding of "no menace" reached, there the affected airport was described as follows:

> . . . It is a privately owned noncommercial airfield, have three turf runways suitable for use only by smaller general aviation aircraft, usually referred to as "private aircraft." Aircraft may land there only with the permission of the owner. It is designated as a secondary airport and is not within a civil airway or designated air traffic control area. . . . (at page 881)

562. More relevant to this case is *WLCY-TV, Inc.,* 38 FCC 2d 86 (1972) where the FCC upheld the determination of no hazard which the FAA had made, and refused to add an air hazard issue in its designation order. There, while indicating it would give a *de novo* review, it stated:

"However, the Commission relies heavily on the FAA's expertise, . . ." The rejection of the FAA finding was found not to be required. Compare *Deep South Broadcasting Company,* 21 FCC 546 (1956).

563. The qualifications of Captains Soderlind and Frederickson in the field of airline operations of large aircraft are indeed impressive. The testimony of the latter cannot be read as either direct or indirect support of the tower, as suggested by WCCO in reply findings. It shows that Captain Frederickson agreed with Captain Soderlind that certain procedural changes foreseen by FAA would have slight effect on airlines, but he did recede from his position that the tower should be located in the Shoreview area.

564. The record does not justify the conclusion suggested by WCCO in reply findings that only its witnesses were "free of bias or motivation to do otherwise than to testify truthfully, fully and knowledgeably" and that the showing of all witnesses in opposition were biased or unworthy of belief.

565. The witnesses as to effects on training schools and small plane flying in general were equally qualified with Captain Soderlind in the operation of small planes and they foresee the same conditions of hazard as did the FAA. There is apparent unanimity that training flights will be impossible and must move elsewhere. As laconically stated by the Broadcast Bureau in its findings, "such flights would decrease" if the tower is built.

566. Accordingly, in view of the divergence in expert opinion expressed, WCCO has not met its burden and it cannot be found that the FAA findings should be rejected. Compare *WLCY-TV, Inc., supra.* Thus, it is concluded there is a reasonable possibility, if not certainty, that the tower proposed by WCCO would constitute a menace to air navigation.

Issue 15

To determine whether or not a grant of any of the proposals would tend towards a fair, efficient, and equitable distribution of radio service among the several states and communities as contemplated by section 307(b) of the Communications Act of 1934, as amended.

WNYC's Proposed 50 kW Daytime Operation

567. WNYC's 1 kW daytime operation presently provides primary service to 11,533,500 persons within the station's 0.5 mV/m (interference-free) contour covering 3,240 square miles. The applicant's proposed 50 kW daytime operation would serve a population of 16,396,300 within an area of 12,500 square miles, or a net gain of 4,862,400 of population and 9,260 square miles of area.

568. WNYC's 1 kW daytime operation presently provides a service of 5

mV/m or greater to a population of 7,230,613 within an area of 261 square miles, or 89 percent of the population and 87 percent of the area of New York City. The applicant's proposed 50 kW daytime operation would provide a service of 5 mV/m or greater to a population of 7,663,257 within an area of 281 square miles, or 97 percent of the population and 94 percent of the area of New York City.

569. WNYC's proposed 50 kilowatt daytime operation would not cause objectionable interference to either WCCO's present or its proposed normally protected 0.1 mV/m ground wave.

WNYC's Proposed Presunrise and Postsunset Operation

570. WNYC seeks a permanent extension of its Special Service Authorization (SSA) to operate permanently during the hours from 6:00 a.m. (EST) to sunrise, New York, New York, and from sunset, Minneapolis, Minnesota, to 10:00 p.m. (EST) (herein called the nighttime operation). WNYC's nighttime operation is limited to its 10.7 mV/m contour by WCCO's present operation and to its 12.7 mV/m contour by WCCO's proposed operation.

571. As limited by WCCO's *present* operation, WNYC's proposed extension of its nighttime SSA would serve a population of 4,388,100 within an area of 138 square miles, entirely within New York City and representing service to 55.6 percent of the population and 46.3 percent of the area of New York City.

572. As limited by WCCO's *proposed* operation, WNYC's proposed extension of its nighttime SSA would serve a population of 3,971,500 within an area of 121 square miles, entirely within New York City and representing service to 50.3 percent of the population and 40.3 percent of the area of New York City.

573. WNYC's proposed extension of its nighttime SSA would cause objectionable interference within WCCO's present secondary service (0.5 mV/m, 50 percent sky wave) contour to a population of 9,983,600 within an area of 185,600 square miles.

574. WNYC's proposed extension of its nighttime SSA would cause objectionable interference within WCCO's proposed secondary service contour to a population in excess of 10,822,400 within an area of approximately 211,200 square miles.

575. As limited by WCCO's present operation, WNYC's proposed 50 kilowatt nighttime operation would serve a population of 9,926,159 within an area of 658 square miles. This represents 99.7 percent of the population and 96.7 percent of the area within WNYC's normally protected 2.5 mV/m contour.

576. As limited by WCCO's proposed operation, WNYC's proposed 50 kW nighttime operation would serve a population of 9,466,507 within an area of 570 square miles. This represents 67.5 percent of the population

and 14.8 percent of the area within WNYC's normally protected 2.5 mV/m contour. The population and area within this contour includes a population of 7,785,694 within an area of 282 square miles (within New York City), which represents 98.6 percent of the population and 94.0 percent of the area of New York City.

577. WNYC's proposed 50 kW nighttime operation would cause objectionable interference within WCCO's present secondary service contour to a population of 7,158,600 within an area of 225,800 square miles excluding the existing interference from station WHAS which embraces 547,300 persons within 12,900 square miles of area, but is wholly within the WNYC interference area, and, within WCCO's proposed secondary service contour, to a population in excess of 9,983,600 within an area of approximately 185,600 square miles.

Other Services Available Within the Area Proposed to be Served by WNYC's Proposed 50 kW Operation

578. With the exception of a combined population of 15,674 in three New Jersey communities within WNYC's 50 kW daytime gain area, there are at least five primary aural services available to all of the areas that would gain service from WNYC's proposed 50 kW daytime operation. At night thee are at least five primary aural services available to all of the areas within WNYC's proposed extension of its 1 kW SSA and its proposed 50 kW nighttime interference-free 10.7 and 12.7 mV/m contours.

Alternative Night Facility Available to WNYC-AM

579. The WNYC-FM service contour covers all of New York City, whereas WNYC's proposed 1 kW SSA operation would serve approximately half of New York City whether the limitation is to the 10.7 mVm contour as imposed by WCCO's present operation, or the 12.7 mV/m contour as would be imposed by wCCO's proposed operation.

580. In addition to a service contour covering all of New York City, as would WNYC's proposed 50 kilowatt nighttime operation, WNYC-FM covers a total land area of more than 2200 square miles. As limited by WCCO's present operation, WNYC's proposed 50 kW nighttime operation would serve an area of 658 square miles. As limited by WCCO's proposed operation, WNYC's proposed 50 kW nighttime operation would serve an area of 570 square miles. The WNYC-FM contour covers virtually all of the area within WNYC's proposed 50 kW nighttime operation (for either the 10.7 mV/m or the 12.7 mV/m limitation).

WCCO's Proposed Operation
Daytime and Nighttime Gain and Loss of Primary Service

581. The following is a tabular comparison of the populations and areas

within WCCO's present and proposed day and night primary service contours:

	Population	*Area Sq. Mi.*
Present	3,346,057	62,047
Proposed	3,505,785	70,221
Proposed gain	178,200	9,031
Proposed loss	18,472	857
Proposed net gain	159,728	8,174

Availability of Other Primary Service to Daytime Gain and Loss Areas

582. The entire proposed daytime primary service loss area receives five or more other primary aural services and most if not all of the proposed gain area is equally well-served.

Availability of Other Primary Service to Nighttime Gain and Loss Areas

583. The greater part of the area that would lose primary nighttime service as a result of WCCO's proposed operation is presently underserved. A population of 434 within an area of 235 square miles would lose its only primary aural service and another 1,431 persons within an area of 311 square miles would receive only one service. Except for a relatively small area that would receive six primary aural services, the remaining area would receive two, three or four such services.

584. As with the loss area, most of the nighttime gain area is presently underserved. WCCO's proposed operation would provide a first primary aural service to a population of 1,374 within an area of 343 square miles and a second service to a population of 15,500 within an area of 1,339 square miles. Although there are areas presently receiving five or more services the greater part of the remaining areas is less well-served and the proposed operation would provide portions thereof with a third, fourth or fifth primary aural service.

Nighttime Gain and Loss of Secondary Service

585. The following is a tabular comparison of the populations and areas within WCCO's present and proposed secondary service contours:

Coverage	*Population*	*Area Sq. Mi.*
Present	21,589,889	1,005,656
Proposed	26,113,787	1,185,191
Proposed gain	4,702,098	188,566
Proposed loss	178,200	9,031
Proposed net gain	4,523,898	179,535

Availability of Other Primary Service to Nighttime Secondary Service Gain Area

586. The primary aural services available to WCCO's proposed secondary service gain area excluding those involved in primary service gain or loss are tabulated below:

Available Primary Service	*Population*	*Area Sq. Mi.*
0	229,264	61,801
1	594,218	47,509
2 or more	3,860,144	78,399
Total	4,683,626	187,709

The greater part of WCCO's proposed secondary service gain area represents white (no available primary aural service) area.

Interference to WHAS's Primary Service Area

587. *Daytime Interference:* WCCO's proposed operation will not cause objectionable interference to WHAS's daytime primary service area

588. *Nighttime Interference:* WCCO does not presently cause objectionable interference within WHAS's normally protected nighttime primary service area. WCCO's proposed operation would limit WHAS's nighttime interference-free service to WHAS's 0.53 mV/m ground wave contour and thus cause objectionable interference within WHAS's normally protected 0.5 mV/m ground wave contour. Such objectionable interference would affect a population of 3,409 within an area of 26 square miles.

Availability of Other Service Within WHAS's Primary Service Interference Areas

589. All of WHAS's nighttime primary service area that would be lost to objectionable interference from WCCO's proposed operation presently receives nighttime primary service from five Class I standard broadcast stations. In addition all of WHAS's primary service area that would be lost to objectionable interference from WCCO's proposed operation presently receives nighttime secondary service from 12 Class I standard broadcast stations.

Conclusions on Issue 15

WNYC's Proposed 50 kW Daytime Operation

590. WNYC's proposed 50 kW daytime operation would provide primary service to approximately 5,000,000 more persons than are presently served. Additionally, WNYC's proposal would increase the population

within New York City that receives a signal of 5 mV/m or greater from 7,023,613 to 7,663,257. This represents an increase from 87 percent to 97 percent of New York City's total population. In addition, WNYC's proposed 50 kW daytime operation will not cause objectionable interference to either WCCO's present or its proposed normally protected 0.1 mV/m ground wave. It is concluded therefore that WNYC's proposed 50 kW daytime operation represents a fair, efficient, and equitable distribution of radio service among the several states and communities as contemplated by Section 307(b) of the Communications Act of 1934, as amended.

WNYC's Proposed Presunrise and Postsunset Operation

591. WNYC's present 1 kW SSA to operate additional hours from 6:00 a.m. (EST) to sunrise New York, New York, and from sunset, Minneapolis, Minnesota, to 10:00 p.m. (EST) (nighttime operation herein), is subject to the following, as is its proposed permanent operation. Examples of such inadequacies are:

(1) As limited by WCCO's present and proposed operation, service, while increased, would be provided to only 55.6 percent and 50.3 percent, respectively, of New York City's population.

(2) Objectionable interference to WCCO's present secondary service would be caused to a population of 8,452,600 within an area of 138,700 square miles. With WCCO's proposed operation such interference would be increased so as to affect a population in excess of 10,822,400 within an area of approximately 211,200 square miles.

Moreover, all of the area served by WNYC's 1 kW SSA operation is already well-served. Accordingly, the grant of a permanent authorization of the SSA would continue the same interference to WCCO as under the SSA.

592. WNYC's proposed 50 kW nighttime operation would provide primary service to substantially all of New York City, subject to the following:

(i) As limited by WCCO's present operation, WNYC would serve a population of 9,926,159 within an area of 326.8 square miles. This represents 70.8 percent of the population and 15.6 percent of the area within WNYC's normally protected 2.5 mV/m contour.

(2) As limited by WCCO's proposed operation, WNYC would serve a reduced population of 9,466,507 within an area of 310.8 square miles. This represents 67.5 percent of the population and 14.8 percent of the area within WNYC's normally protected 2.5 mV/m contour.

(3) The service contour of station WNYC-FM covers substantially all of WNYC's normally protected 2.5 mV/m contour.

(4) Objectionable interference to WCCO's present secondary service would be caused to a population of 7,158,600 within an area of 125,800 square miles (a reduction

from 8,452,600 population and 138,700 square miles). With WCCO's proposed operation such interference would be increased so as to affect a population of 9,983,600 within an area of 185,600 square miles.

All of the area proposed to be served by WNYC's 50 kW nighttime operation is already well-served.

593. It is concluded that the service that would be gained by WNYC's proposed 50 kW nighttime operation would also reduce the service loss it would impose upon WCCO by its present SSA operation. It would, however, increase the service loss to WCCO's proposed operation.

WCCO's Proposed Operation
Daytime and Nighttime Gain and Loss of Primary Service

594. WCCO's proposed operation would provide a net gain in daytime and nighttime primary service to 159,728 more persons and to 8,174 square miles, than does WCCO's present operation. This represents a 4.77 percent population increase and a 13.17 percent increase in service area. These gains are net service gains that take into account a proposed primary service loss to a population of 18,742 within an area of 857 square miles. The daytime primary service loss areas as well as the daytime primary service gain areas are already well-served. Thus, WCCO's proposed operation would provide a gain of daytime primary service that would outweigh the accompanying loss of such service.

595. The proposed WCCO nighttime and primary service gain and loss areas are, for the most part, underserved. As a result, WCCO's proposed operation would provide a first nighttime primary aural service to a population of 1,374 within an area of 343 square miles. At the same time, however, WCCO's proposed operation would result in the loss of the only nighttime primary service to a population of 434 within an area of 235 square miles. WCCO's proposed operation would provide a second nighttime primary aural service to a population of 15,500 within an area of 1,399 square miles. At the same time, however, WCCO's proposed operation would result in the loss of a primary nighttime aural service to a population of 1,431 within an area of 311 square miles.

Nighttime Gain and Loss of Secondary Service

596. WCCO's proposed operation would provide a nighttime secondary service to 4,523,898 more persons and to 179,535 square miles more than does WCCO's present operation. This represents a 20.95 percent population increase and a 17.85 percent increase in service area. These gains are net service gains and take into account a proposed secondary service loss to a population of 178,200 within an area of 9,031 square miles. WCCO's proposed operation would provide secondary service to a population of 229,264 within an area of 61,801 square miles, which is presently without

any primary nighttime aural service. WCCO's proposed operation would also provide a secondary service to a population of 594,218 within 47,509 square miles which is presently limited to a single primary service. WCCO's proposed operation would therefore provide a gain of nighttime secondary service that would outweigh the accompanying loss of such service.

Interference That Would Be Caused to WHAS by WCCO's Proposed Operation

597. *Daytime Service*: WCCO's proposed operation would not cause objectionable interference to WHAS's daytime primary service area.

598. *Nighttime Service:* WCCO's proposed operation would cause objectionable interference to a population of 3,409 within an area of 26 square miles. All of WHAS's service area that is lost to objectionable interference from WCCO's proposed operation presently receives nighttime primary service from five standard broadcast stations.

599. It is concluded that WCCO's proposed operation would provide service gains that would outweigh any accompanying service losses, including those due to objectionable interference to WHAS.

600. As to the WNYC operation, there are many parallels with the *WOI* case. [*Iowa State University of Science and Technology*, 19 FCC 2d (1969)]. While that case did not involve a specified Section 307(b) issue, it did include the question of whether the affiliated FM station, WOI-FM, offered a reasonable alternative to the service there proposed. The Commission there indicated its agreement with the examiner that the existence of WOI-FM offered a reasonable alternative to the AM service there proposed (at page 49). It is not believed this constitutes a precedent here in view of basic factual differences. For example, the FM service there was in the rural, nonmountainous midwest, where propagation of the FM signal might well be assumed, whereas here involved is the concentrated urban area of New York City with its numerous tall buildings renders valid reception estimates impossible and no doubt an example of the reason for the Commission's disclaimer of service predictions arising from measurements under Section 73.311 of the Rules. Moreover, the *WOI* case did not involve a major municipality seeking to communicate with its own citizens.

601. Under the special circumstances here present, it is concluded that both the WNYC proposals and that of WCCO would tend towards a fair, efficient, and equitable distribution of service under Section 307(b) of the Act.

Issue 18

Section 73.188(b)(2) and Section 73.30(c)[23] Issue

To determine whether Station WNYC's 50 kW proposal would provide coverage of the city of New York as required by Section 73.188(b)(2) and Section 73.30(c) of the Commission Rules, the extent of gain and loss of such coverage when compared with its present 1 kW and SSA operations, and, if there is such a violation, whether circumstances exist which would warrant a waiver of these sections.

602. Sections 73.188(b)(2) and 73.30(c) of the Commission's Rules read in pertinent parts as follows:

§ 73.188 Location of Transmitters.

* * *

(b) The site selected should meet the following conditions:

* * *

(2) A minimum field intensity of 5 to 10 mV/m will be obtained over the most distant residential section.

§ 73.30[23] Station location and program origination.

* * *

(c) The transmitter of each standard broadcast station shall be so located that primary service is delivered to the borough or city in which the main studio is located in accordance with the rules and regulations of this subpart.

603. Though not cited in the Review Board's *Memorandum Opinion and Order* (38 FCC 2d 511), which designated the above issue, the Bureau contends, without citation that these designated sections are cross-referenced with Section 73.24(j), no such cross-reference can be found.

Section 73.188(b)(2)

Daytime Coverage of New York City

604. WNYC's present 1 kW daytime operation fails to provide a field intensity of 5 mV/m to all of New York City (WNYC Exhibit 72–111). The areas of New York City not presently covered by WNYC's 5 mV/m daytime contour include: (1) the lower portion of the borough of Richmond; (2) the northern tip of Manhattan; (3) approximately the entire northern half of the Bronx; and (4) the eastern section of Queens (WNYC Exhibit 72–111). The borough of Brooklyn is completely encompassed by WNYC's 5 mV/m daytime contour.

605. WNYC's proposed 50 kW 5 mV/m daytime contour would serve all

[23] This section was repealed, effective April 10, 1973, *Broadcast Station Assignment Standards*, 39 FCC 2d 645 (1973).

of the city of New York except for an area in the northeast section of Queens (WNYC Exhibit 72–111).

606. The following tabulation is a comparison by boroughs of the areas and populations within WNYC's present 1 kW and proposed 50 kW 5 mV/m daytime contours (WNYC Exhibit 72–111):

	Area (Sq. Mi.)		*Population*	
Location	*Present*	*Proposed*	*Present*	*Proposed*
Bronx	27	40	904,655	1,467,584
Brooklyn	70	70	2,602,012	2,602,012
Manhattan	21	23	1,425,498	1,539,233
Queens	97	90	1,813,502	1,758,985
Richmond	46	58	277,946	295,443
Total	261	281	7,023,613	7,663,257
Portion of City	87%	94%	89%	97%

The areas and populations that would be gained and lost within WNYC's 5 mV/m daytime contour as a result of WNYC's proposed 50 kW daytime operation are as follows (WNYC Exhibit 72–111):

	Area (Sq. Mi.)		*Population*	
Location	*Gain*	*Loss*	*Gain*	*Loss*
Bronx	13	0	562,929	0
Brooklyn	0	0	0	0
Manhattan	2	0	113,735	0
Queens	9	16	133,963	188,480
Richmond	12	0	17,497	0
Total	36	16	828,124	188,480
Net Gain	20	0	639,644	0

As indicated above, WNYC's proposed 50 kW daytime operation would not provide a 5 mV/m signal to all of New York City. However, the 5 mV/m daytime coverage of New York City which would result from WNYC's proposed 50 kW daytime operation would represent a significant improvement over the 5 mV/m coverage of WNYC's present 1 kW operation (WNYC Exhibit 72–111).

Section 73.30(c)

Daytime Coverage of New York City

607. WNYC's proposed 50 kW daytime operation will provide (2 mV/m) service to all of New York City (WNYC Exhibits 72–102 and 72–111).

Sections 73.188(b)(2) and 73.30(c)

Presunrise and Postsunset Service Within New York City

608. The 10.7 and the 12.7 mV/m contours of WNYC's present operation are wholly within New York City (WNYC Exhibit 72–102; WCCO Exhibits 72–19 and 72–20). Neither contour extends as far as Staten Island (borough of Richmond), but each encompasses at least a portion of the other four boroughs of which New York is composed. The populations therein and the total areas and populations are as follows (WNYC Exhibits 72–102 and 72–111; WCCO Exhibit 72–19):

	10.7mV/m Contour		*12.7 mV/m Contour*	
Location	*Area*[24] *(Sq. Mi.)*	*Population*	*Area*[24] *(Sq. Mi.)*	*Population*
Bronx	7	166,900	5	66,200
Brooklyn	44	1,879,800	37	1,738,900
Manhattan	13	778,900	10	665,200
Queens	75	1,562,500	69	501,200
Total	139	4,388,100	121	3,971,500
Portion of City	46.3%	55.6%	40.3%	50.3%

609. The 10.7 and the 12.7 mV/m interference-free contours of WNYC's present operation lie completely within the corresponding contours of the station's proposed operation. Thus, only gain and no loss areas would be involved (WNYC Exhibit 72–111). With the exception of two relatively small areas, one on the west coast of Staten Island and the other in northeast Queens, all of New York City would be within WNYC's proposed 10.7 mV/m and 12.7 mV/m contours (WNYC Exhibit 72–111). The population that would gain and the totals that would receive services are distributed as follows (WNYC Exhibit 72–111):

	10.7 mV/m Contour		*12.7 mV/m Contour*	
	Population		*Population*	
	Gain	*Total*	*Gain*	*Total*
Bronx	1,304,801	1,371,701	1,405,501	1,471,701
Brooklyn	722,212	2,602,012	863,112	2,602,012
Manhattan	760,333	1,539,233	874,033	1,539,233
Queens	402,380	1,964,880	386,402	1,887,602
Richmond	292,146	292,146	285,146	285,146
Total	3,481,872	7,869,972	3,814,194	7,785,694
Portion of City		99.7%		98.6%

[24] The square mileage totals indicated on WCCO Exhibit 72–19 differ slightly from those indicated on WNYC Exhibit 72–111, Fig. 6. The latter exhibit shows the 10.7 mV/m contour as 138 square miles (46 percent of the city) and the 12.7 mV/m contour as 124 square miles (41.3 percent of the city).

With WNYC's proposed 50 kW presunrise and postsunset operation, the area of the 10.7 mV/m contour within New York City would be 290 square miles and the area of the 12.7 mV/m contour would be 282 square miles, representing 96.7 percent and 94.0 percent, respectively, of New York City's total area.

Conclusions on Issue 18

Section 73.188(b)(2)

Daytime Coverage of New York City

610. WNYC's proposed 50 kW daytime operation would greatly improve its 5 mV/m coverage of New York City as compared to the coverage of its present 1 kW operation. Further, WNYC's proposed 50 kW daytime operation would be in substantial compliance with Section 73.188(b)(2) of the Commission's Rules, in that 97 percent of the population and 94 percent of the square mile area of New York City would be encompassed within the applicant's proposed 50 kW 5 mV/m daytime contour.

Section 73.30(c)

Daytime Coverage of New York City

611. As WNYC's proposed 50 kW 2 mV/m contour entirely encompasses New York City, it is unnecessary to determine whether this issue, designated by the Review Board, still applies in view of its subsequent repeal. In any event, the rule, if applicable to this proceeding, is met.

Sections 73.188(b)(2) and 73.30(c)

Presunrise and Postsunset Service Within New York City

612. The 10.7 mV/m and the 12.7 mV/m interference-free contours of WNYC's present 1 kW SSA operation lie completely within the corresponding contours of the applicant's proposed 50 kW presunrise and postsunset operation. Consequently, only gain and no loss areas would result from WNYC's proposed 50 kW presunrise and postsunset operation.

613. As a result of WNYC's proposed 50 kW presunrise and postsunset 10.7 mV/m and 12.7 mV/m contours, the percentages of total populations within WNYC's proposed 50 kW presunrise and postsunset 10.7 mV/m contour are 99.7 percent and of the 12.7 mV/m contour 98.6 percent. The area of the 10.7 mV/m contour within New York City would be 290 square miles and the area of the 12.7 mV/m contour would be 282 square miles, representing 96.7 percent and 94.0 percent, respectively, of New York City's total land area.

614. It is therefore concluded that WNYC's proposed 50 kW presunrise and postsunset operation would substantially improve the interference-

free service that would be provided to New York City as compared to the coverage of WNYC's present 1 kW SSA operation and, considering the vast population and size of the city, the coverage is substantially complete, though less than 100 percent, and to the extent compliance with the rule is not achieved, it should be waived.

Issues 19 and 20

Site Availability Issue and Section 1.65 Issue

19. To determine whether the City of New York Municipal Broadcasting System has reasonable assurance of the availability of its proposed transmitter site.

20. To determine whether the City of New York Municipal Broadcasting System has kept the Commission fully informed of significant and material changes in conditions and circumstances relating to its proposed antenna site and, if not, the effect thereof on the basic or comparative qualifications of the applicant to be a Commission licensee.

615. WNYC proposes to construct its proposed 50 kW transmitter at a site located in Richmond County, New York City, New York (WNYC Exhibit 72–60) which it alleges is "city owned." The proposed site is located on a portion of a 360-acre site that encompasses the grounds of Seaview Hospital on Staten Island (WNYC Exhibit 72–95). It was under the control of the city's Department of Hospitals which approved the site for the WNYC transmitter on February 20, 1964.

616. WNYC has requested the Site Selection Board of the city to transfer the site to WNYC, but such action has been deferred until such time as the present application is approved. The Board, has, however, refused other requests for use of the site.

617. During the long pendency of this proceeding, portions of the Seaview Hospital site have been made available to other uses. In April 1970, approximately 10 acres at the corner of the proposed transmitter site were assigned to the city's Department of Social Services. If this application is granted, however, the latter department has agreed to realign its site to remove any possible conflict.

618. On April 24, 1970, New York City leased approximately 20 acres of the Seaview Hospital grounds to the Jewish Community Center of Staten Island for a period of 75 years (WNYC Exhibit 72–98) for use only for camping, recreational, athletic, and educational purposes. Question as to possible impingement of the WNYC site with the Jewish Community Center first arose in July 1971, but lacking metes and bounds surveys the question was not resolved. A map introduced by WCCO (WCCO Exhibit 72–13) showing an approximation of the WNYC site, indicates one tower of the proposed array on the line between the center and WNYC site with one guy and anchor wholly on the center property, one on the dividing line, and one wholly on the hospital grounds.

619. On June 16, 1970, the city transferred all of its hospital facilities including the Seaview Hospital and Home to a newly created public benefit corporation, the New York City Health and Hospital Corporation, for the life of that statutory corporation. As noted, a WNYC guy wire and a guy anchor will apparently be situated on the leased property (WCCO Exhibit 72–13). In the event the corporation should be unwilling to transfer the necessary land for this purpose, the leasehold can be condemned (WNYC Exhibits 72–96 and 72–102; Tr. 5216) and the city is committed to expeditious construction of the proposed facility.

620. While WCCO offered a legal opinion by a private New York counsel specializing in eminent domain, that the city could not condemn the hospital corporation leasehold, the appropriate counsel of the city is of a contrary view. The only court precedent, *Board of Education of Union Free School District* v. *Pace College*, 27 A.P. 2d 87, 276 N.Y.S. 2d 162 (1966) rejected by the WCCO expert because not by the Court of Appeals, appears to favor the position of the city's counsel. Until the license is granted, however the Site Selection Board will not take any action to further delineate the WNYC site.

621. The preliminary plans submitted to the Commissioner of Real Estate pursuant to the center lease, indicate the center has no intention to develop or construct on the portion of the leasehold where the anchor and guy might be located.

622. A related issue is whether those leaseholds should have been reported by way of amendments under Section 1.65 of the Rules. As noted, WNYC represented in its 1964 application and 1971 amendment that the proposed site was "city owned." However, assignments and leases involving this property were made in 1970 and WNYC's application has not been amended to reflect these developments.

623. Sheldon Hoffman, Director of the Municipal Broadcasting System, testified that he learned of the Jewish Community Center lease and the New York City Health and Hospital Corporation lease shortly after June of 1971 and October of 1971, respectively, while attending meetings of the Site Selection Board (Tr. 5286–5289). He testified that he was advised that the leases did not involve a substantial change since they could be condemned (WNYC Exhibit 72–97).

Conclusions on Issues 19 and 20

624. WNYC proposes to construct its transmitter on a portion of a 360-acre site that encompasses the grounds of Seaview Hospital on Staten Island. Although a 10-acre portion of the Seaview Hospital grounds was assigned to the New York City Department of Social Services, it is concluded that this assignment will not in any way affect WNYC's proposed site.

625. A portion of WNYC's guy wires and anchors will be situated on the

Jewish Community Center portion of the Seaview property which was leased by the city. Such property use can be condemned by the city if required. See *Board of Education of Union Free School District* v. *Pace College*, 27 A.P. 2d 87, 90, 276 N.Y.S. 2d 162, 165 (1966). The city's commitment to expeditious construction of the proposed facility is an indication of the city's willingness to take appropriate action to condemn the above property, if necessary.

626. Some of WNYC's guy wires and a guy anchor will also be situated on property leased to the New York City Health and Hospital Corporation. However it is again concluded that this leasehold can be condemned by the city and that the city's commitment to expeditious construction of the proposed facility is an indication of the city's willingness to take appropriate action to condemn the above leasehold, if necessary.

627. The leasehold developments described were significant and material changes which should have been the subject of appropriate amendments pursuant to Section 1.65 of the Rules. If this were truly a comparative hearing, WNYC should be assessed a comparative demerit. There is no indication, however, of misrepresentation or, motive or intent to conceal. The failure was, at best, due to uncertainty as to property line location and the overriding consideration that the question could be removed by condemnation, and, at worst, bureaucratic bungling in a large city government. In any event, if does not reflect on WNYC's basic qualifications.

Issue 21

To determine whether the City of New York Municipal Broadcasting System has available sufficient funds to construct and operate the proposed 50 kW facility for a period of one year.

628. The issue was added by the Review Board by *Memorandum Opinion and Order*, 59 FCC 2d 737, released May 27, 1976, review denied (FCC 76–1022, released November 11, 1976). The Review Board designated this issue "so that evidence may be adduced as to the probable availability of such funds." The burden of proceeding with the introduction of evidence and the burden of proof were placed on WNYC.

WNYC's Financial Proposal

629. WNYC will require $1,053,300 to construct and operate, for a period of one year, its proosed 50 kW facility (WNYC Exhibit 77–6). WNYC proposes to finance this construction and operation in the following manner (WNYC Exhibit 77–6):

City of New York Capital Budget	$ 393,184.00
City of New York Expense Budget	90,000.00

Existing Capital	23,016.10
Department of Health, Education and Welfare (HEW) Educational Broadcasting Facilities Grant	547,100.00
Total	$1,053,300.10

To the extent that the HEW grant is not available to finance construction, or the costs of any such construction increase, the Capital Budget appropriation will be increased accordingly (WNYC Exhibits 77–4, 77–6, and 77–7).

City of New York Capital Budget

630. When WNYC receives final legal authorization to commence construction of the proposed 50 kW facility, i.e., after the Commission grants WNYC a construction permit and all Commission and court appeals have been exhausted, the Mayor, Abraham D. Beame,[25] will request and recommend, in either his Executive Capital Budget or an amendment to an existing Capital Budget, that the Board of Estimate and City Council provide full funding for the project (WNYC Exhibits 77–4, 77–6, and 77–7).

631. Mayor Beame considers WNYC to be one of the finest assets that the city has and he fully supports its application to move its transmitter, expand its hours of operation, and increase its power to 50 kW. When a final decision is reached in this proceeding, Mayor Beame will use the influence of his office to see that his recommendation for full funding for the 50 kW project is carried over to the Capital Budget as adopted. He will do this by explaining to the Board of Estimate, the City Council, and the public the importance and necessity of this project in order to gain their support. Mayor Beame is confident that any Mayor of New York City, including his possible successor, would support this project. Mayor Beame's confidence is based on the history of the city, the history of WNYC, the public support for WNYC, and WNYC's strong contribution to the life of the city. Further, Mayor Beame and Arnold Labaton, Director of the Municipal Broadcasting System of the City of New York,[26] both stated that historically the Board of Estimate and City Council have supported WNYC, and both believe that those bodies will approve the Mayor's recommendation for full funding for the 50 kW facility when it reaches them. At the time they testified, neither Mayor Beame nor Labaton had specifically asked any individual member of the Board of Estimate or City Council how he or she would vote when formally presented with the 50 kW project (WNYC Exhibit 77–4).

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[25] Beame has been Mayor of the City of New York since January 1, 1974. His term of office ended December 31, 1977. He has since been succeeded by Edward I. Koch.

[26] Labaton has held this position since March 1974, is a Mayoral appointee and seves at the pleasure of the Mayor (WNYC Exhibit 77–4).

632. Chapter 9 of the New York City Charter, which became effective January 1, 1977, establishes the procedure under which the city's Capital Budget and Capital Program are formulated, adopted, and amended (WNYC Exhibit 77–1; Tr. 12008, 12010). The Capital Budget is the city's commitment for capital projects (physical public improvements) to be undertaken in the next fiscal year (FY), e.g., FY 1978. The Capital Program (also called Capital Improvement Plan) is the city's budget for capital projects which are planned to be undertaken in the three fiscal years immediately following the next fiscal year, e.g., FYs 1979, 1980, and 1981 (WNYC Exhibits 77–1 and 77–9). New York City's Capital Budget fiscal year begins on July 1 and continues through the succeeding June 30 (Tr. 12013, 12066).

633. The budget procedure for WNYC is as follows:

(a) A budget request for a particular project is prepared by WNYC and forwarded to the Municipal Services Administration (MSA). MSA includes this project in its own Capital Budget request (WNYC Exhibit 77–4). According to Labaton, every Capital Budget program he has submitted to MSA has been included, exactly as submitted, in the MSA Capital Budget program.

(b) Not later than December 15 of each year, the head of each of the city's various agencies (including MSA) submits to the Mayor, Board of Estimate, and City Council, and others with copies to the Community Planning Board[27] and Borough Improvement Boards,[28] a detailed estimate of all capital projects which he believes should be undertaken within the next four fiscal years. These are called departmental estimates for capital projects (WNYC Exhibit 77–1).

(c) Not later than February 1 of each year, each Community Board holds public hearings on the departmental estimates and submits a statement of its budget priorities and capital improvement needs for the next four fiscal years to, *inter alios*, the Mayor, Board of Estimate, City Council, and Borough Board. These statements, although considered in the decision-making process, are not binding on the Mayor, Board of Estimate or City Council. The role of the Community Board is "purely consultative" (WNYC Exhibits 77–1 and 77–3).

(d) Not later than February 10 of each year, each Borough Board submits a statement of the budget priorities and needs of the Borough for the next four fiscal years to, *inter alios*, the Mayor, Board of Estimate, and City Council. These statements are advisory and are not binding on the Mayor, Board of Estimate or City Council (WNYC Exhibits 77–1 and 77–3).

(e) Not later than March 1 of each year, the City Planning Commission submits to the Mayor, Board of Estimate, and City Council a statement of the city's capital needs and priorities. The City Planning Commission's role on budgetary matters is advisory, and its recommendations are not binding on the Mayor (WNYC Exhibits 77–1 and 77–3).

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[27] The members of the Community Boards are local citizens. Half are appointed by the Borough President directly; the other half are appointed by the Borough President on the basis of recommendations made by City Councilmen. There are three Community Boards located on Staten Island (Tr. 12051, 12052, 12072).

[28] The Borough Board is an assembly of all the Community Boards in a Borough (Tr. 12052).

(f) Not later than February 15 of each year, committees of the Board of Estimate and City Council hold joint hearings on the statements and reports referred to in subparagraphs (b), (c), and (d), *supra*. Findings and recommendations of the Board of Estimate and City Council as to capital projects proposed to be included in the budget are submitted to the Mayor not later than March 30 of each year (WNYC Exhibits 77–1 and 77–3).

(g) Not later than April 15 of each year, the Mayor submits to the Board of Estimate and City Council a proposed Executive Capital Budget for the next fiscal year (e.g., FY 1978), and a proposed Executive Capital Program for the three succeeding fiscal years (e.g., FYs 1979, 1980, and 1981).[29] The Mayor's Executive Capital Budget and Executive Capital Program are his recommendations to the Board of Estimate and City Council as to what he believes should be included in the adopted Capital Budget and Capital Program. As such, they are not binding on the Board of Estimate and City Council, which are the bodies that actually adopt the Capital Budget and Capital Program. Binding action can only be taken by these two bodies (WNYC Exhibits 77–1, § 219; 77–3).

(h) Not later than April 20 of each year, the Comptroller and the City Planning Commission submit to the Board of Estimate and City Council reports containing their recommendations and comments with respect to the proposed Executive Capital Budget. These recommendations are not binding (WNYC Exhibit 77–1, § 220).

(i) Between April 21 and May 16 of each year, the Board of Estimate and City Council hold hearings on the proposed Executive Capital Budget and Executive Capital Program (WNYC Exhibit 77–1, § 221).

(j) Not later than June 1 of each year, the Board of Estimate[30] and City Council, by separate concurrent vote, adopt a single Capital Budget and a single Capital Program and return them to the Mayor. The Board of Estimate and City Council may increase, decrease or omit the appropriation for any capital project in the proposed Executive Capital Budget or Program. They may add new capital projects to the proposed budget or program, and they may add, omit or change any term or condition of the proposed budget or program. If the two bodies disagree with respect to a capital project, each must appoint members to a conference committee to reconcile the differences and make recommendations to their respective bodies. If, by June 1, a single Capital Budget and a single Capital Program have not been adopted, "they shall be deemed adopted"

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[29] The Mayor's Executive Capital Program is a planning budget and is not binding on the Mayor, Board of Estimate and City Council. It may be changed by the Mayor prior to its submission to the Board of Estimate and City Council as his Executive Capital Budget. The Capital Program does not become the Capital Budget until the year of that Program. Thus, for example, the Board of Estimate and City Council must vote on the Mayor's Executive Capital Budget for FY 1979 when the Mayor submits it, although those two bodies have previously adopted a Capital Program for FY 1979. Nevertheless, the Capital Program represents an "institutional commitment" to move ahead with a certain project. Mayor Beame, who has announced his intention to run for re-election, testified that should he be defeated, his successor would be entitled to withdraw his (Mayor Beam's) Program and submit his or her own.

[30] The Mayor, who is a member of the Board of Estimate, may not participate in any action or vote of that body on the Executive Capital Budget or the Executive Capital Program (WNYC Exhibit 77–1, § 222(c); Tr. 11836).

with the lower amount of any item in dispute between the two bodies in effect (WNYC Exhibits 77–1, § 222; 77–3).

(k) Not later than June 10 of each year, the Mayor may "disapprove" (veto) any increase or addition to the Executive Capital Budget or Executive Capital Program, any "capital budget" in the Executive Capital Budget or Program, or any change in any term or condition of the Executive Capital Budget or Program. The Mayor's objections must be set forth in writing. Under the New York City Charter, the Mayor has no authority to veto any decrease made by the Board of Estimate and City Council in his proposed Executive Capital Budget or Executive Capital Program (WNYC Exhibits 77–1, § 223(b); 77–3).

(l) Either the Board of Estimate and City Council by a two-thirds vote may override any "disapproval" by the Mayor provided that the other body concurs by a majority vote. Such action must be taken not later than June 20 of each year. If the Board of Estimate and City Council fail to act by June 20, the Capital Budget and Capital Program minus the "disapprovals" by the Mayor are adopted (WNYC Exhibits 77–1, § 223(c); 77–3).

(m) Not later than June 21 of each year the Capital Budget as finally adopted is certified by the Mayor and the City Clerk as the Capital Budget for the ensuing fiscal year (WNYC Exhibit 77–1, § 223(d); Tr. 11852).

634. The Capital Budget and Capital Program amendment process generally follows the same pattern as the adoption process. The agency involved forwards its request for the amendment to the Mayor. The Mayor then forwards his recommendation to the Board of Estimate and City Council, which hold hearings on the recommendation and then act thereon. If the Board of Estimate and City Council adopt the amendment, the Mayor must approve it (WNYC Exhibits 77–1, § 224; 77–3; Tr. 11854, 11855, 12081, 12082). The New York City Charter does not establish any timetable for the Capital Budget amendment process. The Mayor may recommend an amendment at any time during the fiscal year. The Deputy Director of the New York City Office of Management and Budget, Norman Steisel,[31] estimated that it would taken from six weeks to three months to amend an existing Capital Budget (Tr. 12010, 12011). Steisel also testified that "Capital Budget amendments have been relatively rare, and only been initiated on matters of significant and substantial urgency, . . ." (Tr. 12011).

635. City fiscal policy is not to encumber the Executive Capital Budget with appropriations for projects which are unlikely to be initiated in the fiscal year covered by the Budget.[32] This practice is designed to give the city maximum flexibility in incurring long-term debt, in order to encourage the efficient use of public funds. Mayor Beame stated that it would be imprudent to tie up limited Capital Budget funds with projects which do

[31] Steisel has been in his present position since July 5, 1976, is a Mayoral appointee and serves at the Mayor's pleasure (WNYC Exhibit 77–3).

not have a reasonable expectation of being built in the fiscal year covered by the Capital Budget (WNYC Exhibits 77–3, 77–4, 77–6, and 77–7). Mayor Beame also testified that the city could, however, within the next six months to a year, appropriate the full amount of funds needed to construct the 50 kW facility (TR. 11847, 11848). Nevertheless, because of the city's fiscal policy and the city's belief that it will not have final authorization to construct until at least 1981, due to probable court appeals in the event it is successful in this proceeding, neither WNYC nor Mayor Beame included full funding for the 50 kW project in their Capital Budget requests for FY 1978 (WNYC Exhibits 77–4, 77–7, and 77–9).

636. The New York City Capital Program for FY 1979, approved on June 1, 1977, by the Board of Estimate and City Council, includes an "allowance"[33] of $960,000 for the proposed 50 kW facility. The program specifies that $500,000 of the $960,000 required is expected to be provided by a federal grant (from HEW) with the city providing the remaining $460,000 through its Capital Budget. The $500,000 federal grant specified in the Capital Program was included for planning purposes and does not represent the fact that these funds have already been committed by the federal government. If WNYC does not, in fact, receive the $500,000 federal grant, the city would find an alternative source of funds. If by FY 1978–1979, final authorization to commence construction is not received, WNYC will continue to include the 50 kW project in future Capital Program estimates (WNYC Exhibits 77–3, 77–4, and 77–9).

City of New York Expense Budget

637. Funds for the day-to-day operation of WNYC are provided for in the city's Expense Budget. With respect to the proposed 50 kW facility, the estimated cost of operation for the first year will include the cost of labor and the cost of electrical power. Since the proposed transmitter will be capable of operation by remote control, Labaton believes that the cost of labor may be less than that now being expended for that purpose. The cost of electrical power is not included in the WNYC Expense Budget but rather appears in the budget of MSA. Consequently, the estimated cost of

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[32] Section 225(b) of the New York City Charter provides that a capital project included in a Capital Budget that is not "initiated" by the expenditure of funds within two years after its inclusion in the Budget shall be eliminated therefrom. Since funds are currently being spent for the design of the proposed 50 kW transmitter, this project has been "initiated" within the terms of the Charter. Consequently, § 225(b) is not at this time applicable to this project and will not necessitate its removal from the Capital Budget (WNYC Exhibits 77–1, § 225(b); 77–3, 77–4; Tr. 11915, 11916, 11984–86, 11991, 12065, 12066, 12084–86).

[33] The term "allowance" indicates that this is the amount of money which the city's Bureau of the Budget will recommend be spent on this capital program in FY 1979. It is neither an authorization to spend nor an appropriation. Given the city's overall budgetary priorities, the available resources, and current information, this is how the city would spend these funds (Tr. 11991, 11992, 12092).

operation of the proposed 50 kW transmitter will be $90,000, which is substantially the same as that currently appropriated for the operation of the present WNYC transmitter. Because an appropriation to cover all of the costs of operating the WNYC transmitter has continuously been made available since 1924, Labaton believes its availability during the first year of operation of the proposed transmitter is "reasonably assured" (WNYC Exhibits 77–4 and 77–6).

Existing Capital

638. The New York City Capital Budget for FY 1978, reappropriates from previous authorizations a total of $154,217.84 for the proposed 50 kW project. Of this amount, $131,201.74 has already been spent against previous authorizations. Thus, a total of $23,016.10 remains unencumbered and outstanding. This $23,016.10 of existing capital will be used to cover the incidental expenses of the WNYC application, including engineering and technical consulting work related to the design of the proposed transmitter. Legal costs are supplied without charge by the New York City Law Department (WNYC Exhibits 77–3, 77–6, and 77–9).

HEW Grant

639. In April 1977, WNYC filed with HEW an application for federal assistance under the Noncommercial Educational Broadcasting Facilities Program (47 USC 390). WNYC requests an Educational Broadcasting Facilities Grant in the amount of $547,100 in order to assist in the construction of the proposed 50 kW facility. The application covers only the current fiscal year (WNYC Exhibit 77–6; WCCO Exhibit 77–1).[34]

640. Among the criteria utilized by HEW to determine whether to approve an application for an Educational Broadcasting Facilities Grant are the following:

(a) the extension of noncommercial educational radio coverage;

(b) a strengthening of the capability of existing noncommercial educational radio stations to provide local service;

(c) the provision of multiple radio stations in major population centers to broaden services for special interest, minority and educational uses;

(d) equitable geographical distribution of funds throughout the states; and

(e) the nature, amount, and recency of any prior grants to the same applicant.

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[34] To reactivate a pending application accepted for filing, an applicant must either submit a statement requesting reactivation or amend its application by a cutoff date. Such requests are considered *pro forma* [45 CFR § 153.5(a)(2); Tr. 11889, 11890].

[47 USC § 392(d)(2); 45 CFR § 153.12; 45 CFR Part 153, Appendix B; Tr. 11879.]

641. In order to be eligible for an Educational Broadcasting Facilities Grant an applicant must establish the following, *inter alia:*

(a) it is a municipality which already owns and operates a facility used only for noncommercial educational broadcasting;

(b) the transmission apparatus will be owned by the applicant;

(c) the operation of the noncommercial educational broadcast facilities will be under the control of the applicant;

(d) sufficient funds will be available when needed to meet the non-federal share of the cost of the project;

(e) all non-federal sources for funds have been taken into account and are the maximum contributions available from such sources;

(f) the applicant holds appropriate title or lease to the site;

(g) the transmission apparatus will be used primarily for educational broadcasting purposes and only incidentally for educational purposes by means of closed circuit;

(h) there has been, and the applicant has participated in, comprehensive planning for educational broadcasting facilities and services in the area to be served; and

(i) the applicant will make the most efficient use of the assigned frequency.

[45 CFR §§ 153.4(b)(5), 153.5(c)(3)–(c)(10); Tr. 11887.]

642. Applications which are found to be complete or substantially complete and in accordance with the relevant provisions of 45 CFR Part 153, are accepted for filing. The acceptance for filing is a procedure designed for making preliminary determinations of eligibility and for providing an opportunity for public comment. Acceptance of an application for filing does not assure that application of being funded; it merely qualifies that application to compete for funding with other applications accepted for filing. WNYC's application for an Educational Broadcasting Facilities Grant, which was filed approximately one month prior to the hearing sessions, had not yet reached the acceptance for filing stage of proceesing (45 CFR § 153.8(a) and (c); Tr. 11888, 11889).

643. The maximum amount of funds which may be granted to an applicant is 75 percent of the cost of the project. HEW will not make an Educational Broadcasting Facilities Grant until after a determination has been made that the applicant's share of the costs of the project (at least 25 percent) is already on hand and available. The fact that a municipality must first go to a legislature to obtain the necessary funds would delay a final grant of HEW funds, although it would not delay the processing of

the application. HEW will not make a grant final until it receives confirmation from the FCC that any necessary new authorization has been granted and has become final.[35] The total of the grants made in any one state under the Educational Broadcasting Facilities Program may not exceed 8½ percent of the current appropriation for the program. There are no provisions for transferring funds from one state's quota to another's or for holding funds is reserve for an applicant. The current (FY 1977) appropriation for the program is $14,000,000; HEW has requested $14,000,000 for this program in its budget submission for FY 1978 [47 USC §392(b) and (e); 45 CFR § 153.15(a)].

644. John Cameron, Director of the Educational Broadcasting Facilities Program of HEW, testified that in his opinion WNYC is an eligible applicant and its application comes within the priorities of the program, namely, to increase the areas served by noncommercial broadcast stations. Cameron's opinion as to eligibility is based on the fact that WNYC-AM has previosuly received Educational Broadcasting Facility Grants from HEW and its eligibility had been determined at that time. In addition, Cameron stated that recipients of grants must submit to HEW an annual status report certifying their continued eligibility. Cameron also testified that none of the previous HEW grants related to WNYC's proposed 50 kW facility, and that his office has no policy whereby an applicant which has previously received a grant automatically becomes eligible for future grants. Cameron also stated that the 8½ percent per state limitation has always presented a problem with respect to New York State applicants and would be a major consideration[36] [45 CFR § 153.19; WNYC Exhibit 77–8; Tr. 11876, 11887–11891].

645. Prior to submission of the application, Labaton orally informed HEW officials that he did not anticipate final resolution of this proceeding (i.e., the grant of a construction permit) in this fiscal year, and that the HEW application was being filed in order to "get a place in line" for a future grant. Labaton stated that the HEW officials advised him to submit the pending application despite this, in order that it be reactivated in future years (WNYC Exhibit 77–6).

646. Labaton is optimistic that HEW will ultimately grant WNYC's application for funds because according to a recent Arbitron survey conducted by the Corporation for Public Broadcasting, WNYC-AM has the largest noncommercial radio audience in the United States. Labaton's

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[35] In this connection, the FCC and HEW have a "working relationship." Prior to finalizing a grant of funds, HEW will receive assurance from the FCC that any necessary authorization will be forthcoming. The FCC in turn, prior to a grant of the authorization, will receive assurance from HEW that the funding will be forthcoming (Tr. 11885).

[36] Cameron stated that there have never been sufficient funds appropriated to accommodate all of the pending applications. However, for the last several years, Congress has appropriated more funds for this program than were requested by HEW (Tr. 11879, 11892).

optimism is also based on his belief that the 50 kW project is consistent with the purposes of the Educational Braodcasting Facilities Program in that it would significantly extend the population served by WNYC. Labaton expects that WNYC will receive approximately $500,000 from HEW despite the 8½ percent per state limitation. This expectation is based upon Labaton's belief that HEW grants of this magnitude have previously been given to New York State stations (WNYC Exhibit 77–4; Tr. 11917, 11918, 11992–11995).

Emergency Financial Control Board

647. In the fall of 1975, the New York State legislature enacted the New York State Financial Emergency Act for the City of New York (FEA) (Chapters 868, 869, 870, and 888, McKenney's Session Laws of New York 1975). This act created the New York State Emergency Financial Control Board for the City of New York (EFCB). In order to ensure that the city has sufficient funds to meet its obligations, the EFCB is empowered to review contracts prior to their being entered into by the city. If sufficient funds are not available, the EFCB will disapprove the contract and the city may not enter into it. The city's Office of Management and Budget reviews these same contracts prior to their submission to the EFCB. Unless that office is satisfied that an agency has sufficient funds in its budget to accommodate the contract, it will not be forwarded to the EFCB for its review. Since its creation, hundreds of contracts have been submitted to the EFCB; none has been disapproved. The FEA specifically reserves to the city the power to determine the purposes for which capital funds are to be appropriated and the amounts thereof, provided that the aggregate expenditures permitted by law are not exceeded [FEA §§ 5, 7.1(e)(ii) and (iii); WNYC Exhibit 77–2 and 77–3].

Public Witnesses

648. Two public witnesses appeared and testified on the financial issue, Charles H. Berger and Carolyn Forsythe. Both reside on Staten Island. Berger is president of the Civic Congress of Staten Island (Civic Congress), which is composed of 53 member organizations. Forsythe is vice president and construction chairman of the Parent-Teacher Association of Susan Wagner High School (PTA). Both the Civic Congress and the PTA have been opposed to the location of WNYC's proposed 50 kW antenna on Staten Island. The Civic Congress' opposition dates back to 1971; the PTA's to 1970. Both Berger and Forsythe stated that members representing their respective organizations would appear before the local Community Boards, the City Planning Commission, and the Board of Estimate and speak in opposition to the proposed 50 kW facility. In addition, Berger stated that the Civic Congress would also request its local city councilmen and congressmen to speak against the 50 kW project before

the Board of Estimate, the New York State legislature, and HEW. Both Berger and Forsythe were of the opinion that due to borough-wide opposition, the local community boards, when asked to vote thereon, would reject it. Neither Berger nor Forsythe is presently a member of a community board or a borough board (WCCO Exhibit 77–2).

649. The out-of-pocket expenses of Forsythe in connection with her testimony in Washington, D. C., were paid by Midwest Radio-Television, Inc. (WCCO) (Tr. 12145). Moreover, a New York City area consultant, Morey Webster employed by WCCO, has been active in appearing before and supplying information to opponents of the location of the proposed WNYC antenna on Staten Island without identifying his relationship to WCCO. While WNYC witness Labaton did not document this fact and expressed it as a "belief" Webster's activities were confirmed by witnesses Berger and Forsythe. Moreover, WCCO did not attempt to refute the statement that Webster was its representative, and did not, in its reply filing, question WNYC's allegation in proposed findings (Par. 6.3) that the testimony of the public witnesses had been "nurtured and encouraged by the action of WCCO."

650. As pointed out by the Broadcast Bureau, however, there is no indication the motivations of the public witnesses or of their organizations, was other than good faith or that their initial opposition was initiated or stimulated by WCCO. Nor is there evidence that Webster's or WCCO's conduct in this regard was improper or unethical in any way.

Conclusions on Issue 21

651. The issue here is as to the "probable availability" of sufficient funds to construct and operate, for a period of one year, WNYC's proposed 50 kW facility. WNYC will require $1,053.300 for construction and operation, and proposes to finance these costs in the following manner:

Capital Budget Funds	$ 416,200.10
Expense Budget Funds	90,000.00
HEW Grant	547,100.00
Total	$1,053,300.10

652. The Commission policy stated in the designation order is to require only a reasonable, rather than a stringent, showing of financial qualifications for noncommercial stations. Compare *NTA Television Broadcasting, Corp.*, 44 FCC 2563 (1961) and *Quinnipiac College et al.*, 33 FCC 2d 1041 (RB)(1972). This is especially important in considering the municipally owned and operated WNYC. The financial problems of New York City are so well-known they require no discussion here. Moreover, any governmental operations under the control of elective officials and budgetary processes can give no absolute assurances as to the future. WCCO

perceives, however, standards under which no governmental authority, including the United States Government, could qualify. For example, WCCO would fault WNYC for not having polled the city's legislative bodies as to whether they would make necessary appropriations "four or more years hence." Neither the city; nor HEW on whose expected grant reliance is made, are willing to commit funds until a construction permit is issued. The age of this proceeding amply demonstrates the futility of such a procedure. Had that course been followed, funds would have to have been set aside 14 years ago, with the outcome of the permit still in doubt even today. And the inflation since 1964 would have made those funds wholly inadequate today.

653. Accordingly, the standards suggested by WCCO are rejected and consideration will be given to the "probable availability" envisioned by the Review Board.

Capital Budget Funds

654. WNYC has provided reasonable assurance of the probable availability of sufficient Capital Budget funds to meet the costs of construction of the proposed facility. Specifically, the Chief Executive Officer of New York City, Mayor Abraham D. Beame, testified that he fully supported WNYC's application as had his predecessor, and that when authority to construct becomes clear, he will request and recommend in either his Executive Capital Budget or in an amendment to an existing Capital Budget, that the Board of Estimate and City Council provide full funding for the project. In addition, Mayor Beame included in his Executive Capital Program for FY 1979, an allowance of $960,000 for the 50 kW project. This program, with the $960,000 intact, was approved by the Board of Estimate and the City Council on June 1, 1977. Thus, the three parties with "ultimate control over the city's budgetary processes"—the Mayor, Board of Estimate, and City Council—have each spoken and shown their willingness to move forward and provide the necessary Capital Budget funds for this project.

655. Although the city's Capital Program is essentially a planning tool and is subject to change, it does represent an institutional commitment to move ahead with the 50 kW project. As suggested by the Bureau, the fact that the program is subject to possible change is irrelevant. By way of analogy, the Commission requires applicants for commercial broadcasting facilities to provide "reasonable assurance" of the availability of a bank loan. One such form of assurance traditionally accepted is a bank commitment letter. *Tri-City Broadcasting Co.*, 35 FCC 364 (RB 1963). However, "[t]he Commission does not require a commitment to be a legally binding agreement with recourse to the proposed lender." *Theodore Granik*, 8 FCC 2d 1068, 1071 (RB 1967). The Bureau argues that if the possibility of a change, in and of itself, is not sufficient to invalidate a showing based on a

bank commitment, it should not invalidate the showing made by WNYC with respect to the city's FY 1979 Capital Program. There is no evidence of record indicating that any change in the relevant portion of the FY 1979 Capital Program is contemplated or will, in fact, take place. Consequently, as of now, the Capital Program for FY 1979 includes sufficient funds to construct the proposed facility. In view of the willingness of the Mayor, Board of Estimate, and City Council to provide necessary Capital Budget funds for this project, any argument that the Capital Program may be changed is speculative.

656. Further, the fact that additional legislative action is necessary before the FY 1979 Capital Program becomes the FY 1979 Capital Budget should not preclude resolution of this issue in WNYC's favor. Similarly, the fact that the city will not seek final appropriation of funds until after the Commission grants WNYC a construction permit should not be controlling.

Expense Budget Funds

657. The estimated cost of operation of the proposed transmitter will be substantially the same as that currently appropriated for the present WNYC transmitter, i.e., $90,000. Since an appropriation to cover the entire cost of operating the WNYC transmitter has continuously been made available since 1924, its probable availability in the future is reasonably assured. In view of this extended commitment there is nothing to suggest its default in the future.

HEW Funds

658. Where Government grants are relied on as part of the financial plan, the Review Board has inquired into whether the applicant "will likely" meet the eligibility requirements of HEW for a grant. *Alabama Citizens for Responsive Public Television, Inc.*, 62 FCC 2d 755, 763 (RB 1977). WNYC has presented reliable evidence of its "likely" eligibility and, therefore, has met that test. Specifically, John Cameron, director of the Educational Broadcasting Facilities Program of HEW, testified that it was his opinion that WNYC is an eligible applicant and that its application comes within the priorities of the program. It is true, of course, that HEW will not make the grant until a construction permit is issued, and there are statutory limitations, including a maximum for any one state. Should a lesser grant than sought be made, it is the city's intent to appropriate any additional required.

659. It is concluded that Educational Broadcasting Facilities Grant funds are reasonably available to WNYC, and that the required amount for construction and first year's operation are reasonably assured and the availability of the funds probable.

Cowles Condition

660. In its 1972 order herein, 33 FCC 2d 285, the Commission noted a relationship between Midwest Radio-Television, Inc., licensee of WCCO, and Cowles Florida Broadcasting, Inc., licensee of station WESH-TV, Daytona Beach, Florida. It accordingly directed that any authorization which might issue to WCCO herein was without prejudice to appropriate action arising out of Commission Docket No. 19168 as a result of pending proceedings involving Cowles Communications, Inc. instituted by the Federal Trade Commission against Mutual Readers League, Inc., a subsidiary of Cowles. Later, by Memorandum Opinion and Order released May 15, 1972, FCC 72–393, the Commission provided that WCCO might submit evidence on the question of the connections between the Cowles Corporations and that the Presiding Officer might ignore the direction to include the condition.

661. On August 20, 1973, Midwest Radio-Television, Inc., filed a Petition with the Presiding Officer seeking removal of the Cowles condition. The succeeding Administrative Law Judge, however, denied the Petition, by Order released June 21, 1974, FCC 74M–722.

662. In *Cowles Florida Broadcasting, Inc.*, 60 FCC 2d 372 (1976), reconsidered at 62 FCC 2d 953 (1977),[37] the Commission discussed the intercorporate relationships and circumstances which led to the issue. The Commission concluded no character issue was involved. Accordingly, the Order released June 21, 1974, will be rescinded and the Petition filed by Midwest on August 20, 1973, will be granted.

Evidentiary Ruling

663. *WCCO:* In establishing its coverage which would result from the construction of its Franklin antenna at the new site, WCCO sought to introduce evidence with respect to so-called "fade-free" areas (WCCO Exhibits 72–4, portions of 72–5S, 72–6S, and 72–7) but these were excluded on objection of Broadcast Bureau counsel on authority of *KWHK Broadcasting Co., Inc.*, 3 FCC 2d 409 (1966). WCCO continues its offer of proof and summarizes its argument in Appendix A to its Proposed Findings.

664. The ruling will be reaffirmed. It is noted, however, that in any event, the evidence set out in Findings on Issue 2 indicate substantial net gains in both primary and secondary daytime and nighttime service.

665. At the hearing, and continuing in its Proposed Findings, WCCO has objected to the fact that WNYC Exhibit Nos. 72–7 through 72–35 and 72–69 listed programs, including programs for the gain area outside of

[37] Pending Court review in *Central Florida Enterprises, Inc. v. FCC*, No 76-1742 in the Court of Appeals (D.C. Circuit).

New York City, which has not been included in the amended application. The then Presiding Judge overruled the objections and received the Exhibit (Tr. 3225). No error or prejudice to the parties is found in that ruling and it is reaffirmed.

666. *WNYC:* As noted in the discussion of Issue 12, an ascertainment study identified "WNYC Ex. 72–69–1973" was rejected. In addition, WNYC Exhibit 72–86 "Special Events Broadcast by WNYC–AM during 1972", WNYC Exhibit 72–87 "Special Events Broadcast by WNYC–FM Live during 1972",[38] and WNYC Exhibit 72–88 "Live Concerts Broadcast by WNYC-FM during 1972", were rejected (Tr. 4898, 4904).

667. On brief, WNYC argues for the acceptance of these exhibits which were all rejected on the basis of failure to distribute within the time prescribed. While it is ironic that exclusion on the basis of timeliness in a proceeding which has taken over 20 years, as contended by WNYC, the orderly disposition of administrative proceedings requires adherence to schedules and procedures. Moreover, as noted in connection with the discussion as to WNYC Exhibit 72–69–1973, the procedural consequences, i.e., the probable need to reopen the record for further hearings should the rulings be reversed, militate against a reversal. Those rulings are therefore affirmed.

Ultimate Conclusions

Issues 16 and 17

16. To determine which of the proposals would best serve the public interest.

17. To determine, in light of the evidence adduced with respect to the foregoing issues, which, if any, of the applications should be granted.

668. Conflicting public interest goals meet headlong in this proceeding. On the one hand, the maintenance of the 830 kc channel as a "clear channel" and the freeing of WCCO from the interference now caused by WNYC-AM, would be enhanced by the removal of the latter from the scene. On the other hand, the strong public interest considerations in having the City of New York operating a service to and for its own citizens on a noncommercial basis which, though regularly licensed for daytime operations, has been operating on temporary authorizations (Special Service Authorizations) during morning and evening hours (presunrise and postsunset) since 1942.

669. WNYC-AM wishes to operate from 6:00 a.m. to 10:00 p.m. Due to the vagaries of the sun, its daytime authorization, however, does not reach

[38] The transcript does not show WNYC Exhibit No. 72–87 as rejected, nor does it show it as received. It will be considered to have been rejected in view of its non-reception and the rulings on WNYC Exhibits 72–86 and 72–88.

this spread and special authorization is needed morning hours for five months (November through March) and in evening hours throughout the year ranging from 1 hour in June and July to 4½ hours in December. During these same nighttime hours, the "sky wave" phenomena vastly extends the coverage of WCCO, Minneaplis, on the same frequency thus presenting the first or basic dilemma in this proceeding.

670. In the original Docket No. 11227, the Presiding Officer issued an Initial Decision on July 8, 1957, and recommended continuation of the temporary Special Service Authorization pointing out that there could be no permanent authorization until the Commission acted in the separate *Clear Channel* proceeding, Docket No. 6741. No further action was taken in Docket No. 11227 but the SSA's have since been renewed.

671. In 1962, the Commission decided the *Clear Channel* case and referred to this proceeding by pointing out it might be possible for WNYC to *increase* its power at a different transmitter site while giving WCCO greater protection. Pursuant to a special provision made by the Commission, WNYC thereupon filed its application for increase to 50 kW at a Staten Island antenna site. The record confirms the Commission's forecast by showing that the interference to WCCO, which exists only in the SSA hours, will indeed be reduced.

672. Another important public interest consideration comes into play at this point. It is basic Commission policy that licensees serve the communities of their license. Due to its low power, 1 kW, the present service of WNYC-AM covers only about half of the city; the 50 kW service, if approved, will increase that to almost 100 percent.

673. During the course of the proceeding a complication was added by WCCO seeking approval to move its transmitter site and install a new type antenna on a tower 1195 feet above ground level. While the Commission noted that such an application would ordinarily be approved routinely, it would have the effect of increasing the nighttime interference to WNYC-AM in the New York City area and reduce the so-called interference-free reception during the non-daylight hours. The Commission did not indicate how it would evaluate this factor, but it also specified an inquiry into the "air hazard" factor due to the height of the proposed tower and the absence of a "no hazard" finding by the Federal Aviation Administration (FAA). Subsequently, the FAA has found it to be a potential hazard.

674. If it be concluded that the initial WNYC-AM application, i.e., to operate the extra morning and evening or SSA hours should be granted, it automatically follows that the 50 kW at the new antenna site would also be granted as it will accomplish two important objectives (1) reduce interference to WCCO and (2) improve coverage of the city of license. This

would of course render the application for permanent authority during the SSA hours, at the *present* antenna site and authorized 1 kW of power, moot.

675. With regard to the proposed WCCO antenna, the effect on the WNYC-AM proposal is minimal. The WNYC-AM proposal would serve, under the present WCCO operation (10.7 mV/m contour) 7,869,972 persons in 290 square miles of the city; under the WCCO proposal, this would be reduced to 7,785,694 persons and 282 square miles. The difference, or reduction caused by the proposed new WCCO antenna, thus is 84,278 persons and 8 square miles of area. Based on that consideration alone, it would appear there should be no objection to the WCCO antenna relocation proposal when weighed against the benefits of the increased sky wave coverage, primarily in the west.

676. The WCCO proposal, however, must fall on the "air hazard" issue for the reasons discussed in detail in Issue 14. It is ultimately concluded, therefore, that the application of Midwest Radio-Television, Inc., Docket No. 19403, must be denied.

677. With regard to the basic or fundamental issue, the City of New York has disserved itself and raised many problems by its failure to follow the Commission's requirements as to methods of ascertaining the needs of the areas to be served and designing and identifying the programs to serve those needs. Apparently deceived by its own long time efforts in this direction—seeking better to serve its constituent listeners—it chose to pursue those methods rather than those required by the Commission until very late in the game. Nevertheless, the public interest in terminating this protracted proceeding is so great, it would be unthinkable to reopen this record at this time to allow correction. It would be equally unthinkable to deprive the municipality of its own important media voice to its people on what could be considered technical grounds. This case is unique in many respects and should not weaken the Commission's efforts in the ascertainment and programming areas. Accordingly, the Presiding Judge concludes that the City of New York shortcomings (see Issue 12) should not preclude a grant of the 50 kW application.

678. The area of interference to WCCO's clear channel lies wholly in its secondary service area in the relatively heavily populated east between Minneapolis and New York City. The WCCO signal to the generally less populated areas to the southwest, west and northwest of Minneapolis are unaffected. Though less than satisfactory, it is believed the permanent authorization of the nighttime (presunrise and postsunset) hours of WNYC is justified in the larger aspects of the public interest. That being assumed, the granting of the 50 kW application will improve WCCO's situation.

Accordingly, IT IS ORDERED, that unless an appeal from this Initial Decision is taken by a party or is reviewed by the Commission on its own motion in accordance with the provisions of Rule 1.276:[39]

(1) The application of the City of New York Muncipal Broadcasting System (WNYC-AM), File No. BP–16148, Docket No. 17588, IS GRANTED:

(2) The application of the City of New York Municipal Broadcasting System in File No. BSSA–226, Docket No. 11227, IS DISMISSED as moot due to the granting of the 50 kW application;

(3) The application of Midwest Radio-Television, Inc. (WCCO), File No. BP–19151, Docket No. 19403, IS DENIED.

IT IS FURTHER ORDERED that the construction permit issued pursuant to paragraph 2 above, shall contain the following conditions:

Condition No. 1

An antenna monitor of sufficient accuracy and repeatability, and having a minimum resolution of 0.1° phase and 0.1% sample current ratio deviation shall be installed and continuously available to indicate the relative phase and magnitude of the sample currents of each element in the array to insure maintenance of the radiated fields within the maximum authorized expected operating values of radiation.

Condition No. 2

Upon receipt of operating specifications and before issuance of a license, permittee shall submit the results of observations made daily of the base currents and their ratios, relative phases, sample currents and their ratios, and sample current ratio deviations for each element of the array along with the final amplifier plate voltage and current, the common point current, and the field intensities at each monitoring point for both the nondirectional and directional operations for a period of at least thirty days, to demonstrate that the array can be maintained within the specified tolerances.

AND IT IS FURTHER ORDERED, that the order herein released June 21, 1974, IS RESCINDED and the Petition of Midwest Radio-Television, Inc., seeking removal of the Cowles condition, IS GRANTED.

FEDERAL COMMUNICATIONS COMMISSION

Frederick W. Denniston
Administrative Law Judge

[39] In the event exceptions are not filed and the Commission does not review the case on its own motion, this Initial Decision shall become effective 50 days after its public release pursuant to Rule 1.276(d).

Action, Appealable
Settlement
Stay

Board will grant extraordinary relief and stay proceeding even though appeal is not authorized. Filing of proposed findings would result in irreparable injury in view of state court ruling ordering specific performance of proposed settlement agreement.
—*Hanover Radio, Inc.*
BC Docket No. 80–664

FCC 82R–55

BEFORE THE

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In re Applications of	
HANOVER RADIO, INC. Mechanicsville, Virginia	BC DOCKET No. 80–664 File No. BPH–780831AQ
NINETY-TWO POINT SEVEN BROADCASTING, INC. Mechanicsville, Virginia	BC DOCKET NO. 80–665 File No. BPH–780831AR
For Construction Permit For a New FM Station	

MEMORANDUM OPINION AND ORDER

Adopted: September 13, 1982; Released: September 17, 1982

BY THE REVIEW BOARD:

1. The Review Board has before it a petition for extraordinary relief filed August 31, 1982 by Hanover Radio, Inc. (Hanover) seeking reversal of the ruling of ALJ Joseph Chachkin refusing to suspend procedural

dates in the above-captioned proceeding. Also before the Board are: (i) an opposition by Ninety-Two Point Seven Broadcasting, Inc. (92.7) filed on September 3, 1982; (ii) comments filed by the Broadcast Bureau September 3, 1982; and (iii) supplement filed by Hanover on September 8, 1982. For the reasons set forth below, we will grant Hanover's petition.

2. Before discussing the substantive merits of the dispute, we must first address the procedural aspects of Hanover's petition. 92.7 notes in its opposition, that Section 1.301(b) of the Commission's rules (47 CFR § 1.301(b)) permits appeals of ALJ interlocutory rulings only upon leave of the ALJ. And, 92.7 is also correct when it contends that such interlocutory rulings are final under the rule unless there has been egregious error or manifest abuse of discretion and the appealing party has met the burden of establishing that such has occurred. *Communications Satellite Corp.*, 32 FCC 2d 593 (1971). As discussed more fully hereinbelow, however, we depart from 92.7 and find that Hanover has met its burden.

3. By way of context, Hanover's appeal in this comparative contest for a new FM station in Mechanicsville, Virginia follows 92.7's withdrawal from a settlement agreement pursued under the umbrella of Section 311 of the Communications Act of 1934, as amended (47 U.S.C. § 311). Although a settlement agreement between the competing parties was submitted on February 4, 1982, 92.7 on March 31, 1982, sought to withdraw from the agreement. On April 7, 1982, the ALJ permitted 92.7 to withdraw and scheduled a hering on the outstanding issues against Hanover. Hearing was completed in June 1982, and the filing of proposed findings was scheduled for September 3, 1982. On August 17, 1982, pursuant to an action brought by Hanover, the Circuit Court of the City of Richmond ruled that Hanover was entitled to specific performance of the agreement and directed counsel to submit a draft order to that effect. Hanover, on August 20, 1982, sought a continuance of procedural dates in light of the court's ruling and on August 27, 1982, the ALJ denied the request except that he granted a two-week extension of time to file findings.

4. Hanover thus seeks from us a vacation of the ALJ's refusal to stay the procedural dates for the submission of proposed findings, the operative effect of such reversal being the imposition of the stay refused below. In order to adduce whether Hanover has met its burden for accepting its appeal by showing egregious error or manifest abuse of discretion, *Communictaions Satellite Corp., supra,* we believe it appropriate to analyze the ALJ's action under the legal criteria commonly used to resolve stay requests. In such instances, the courts look to several elements generally enunciated as follows:

> (1) Has the petitioner made a strong showing that it is likely to prevail on the merits of its appeal? Without such a substantial indication of probable success, there would be no justification for the court's intrusion into the ordinary processes of administration and judicial review. (2) Has the petitioner shown that without such relief, it will be

> irreparably injured? . . . (3) Would the issuance of a stay substantially harm other parties interested in the proceedings? . . . (4) Where lies the public interest? . . . .

Virginia Petroleum Jobbers Ass'n. v. *FPC*, 259 F.2d 921, 925 (D.C. Cir. 1958). More recently, the D.C. Circuit reviewed these elements and, noting the trend of sister circuits, indicated that if a "balance of the equities" test under the latter three *Virginia Petroleum Jobbers* criteria militated toward a stay, one should likely be granted. *Washington Metropolitan Area Transit Comm'n.* v. *Holiday Tours, Inc.* 559 F.2d 841 (D.C. Cir. 1977). Thus, the court stated (*id.* at 844):

> An order maintaining the status quo is appropriate when a serious legal question is presented, when little if any harm will befall other interested persons or the public and when denial of the order would inflict irreparable injury on the movant.

5. Petitioner has here shown that irreparable injury will occur if status quo is disturbed. It makes the uncontested assertion that "$10,000 to $15,000 additional will be required for proposed findings and reply findings."[1] which expenditure would be superfluous if 92.7 continues to be compelled to specifically perform on the settlement agreement.[2] On the other hand, we see no appreciable injury to 92.7 if Hanover's request is granted. The hearing in this case was designated in 1980 and a deferral of procedural dates at this point in time will cause no significant protraction of the case, relatively speaking. Indeed, nowhere in its voluminous opposition does 92.7 even allege that the relief requested by Hanover will cause it the slightest harm.

6. Insofar as the public interest criterion is considered, this too strongly supports Hanover's request. On top of the fact that deferral of the procedural dates may obviate the public expense in having the Commission consider the competing findings of fact and conclusions of law and, potentially, the issuance of a reviewable Initial Decision, all of which could be mooted by collateral judicial interdiction, the Commission has previously indicated its view that it will defer to state contract law even where the effect of the *lex loci* is to preclude the prosecution of a competing broadcast application by a local entity. *Raul Santiago Roman*, 4 RR 2d 175, *recon. denied*, 38 FCC 2d 619, 4 RR 2d 777 (Rev. Bd. 1965). While Commission policy does favor competing applicants, the Board determined in the aforecited case that federal licensing of stations did not constitutionally oust states of jurisdiction over local contractual matters not in conflict with federal policy. In general, and as a public interest

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[1] *Hanover Petition*, at 10 n. 11.

[2] In view of our determination that coercing Hanover to make sizable legal expense may well be unnecessary as a result of the operation of contract law, we need not determine whether—as Hanover urges—92.7's refusal to effectuate the settlement agreement is itself irreparable injury. It is appropriately addressing that issue in the state forum.

matter as well, the Commission seeks to avoid federal/state conflicts and it expressly recognizes valid local contract law. *Id.*

7. Finally, and in accord with the tenets of *Washington Metropolitan Area Transit Comm'n, supra,* we need not find that Hanover has a "mathematical probability" of success on the merits of any appeals of the state court decision (*see* 559 F.2d at 843). In view of its victory before Circuit Judge Walker, Hanover clearly appears to have "made a substantial case on the merits" *(id.)* and has met the relevant criterion.[3] By contrast, 92.7 does not seriously argue with Judge Walker's decision and expressly notes "that 92.7 did not state that it would not voluntarily comply with Judge Walker's opinion as Hanover has incorrectly stated in its petition." (92.7 Opposition, at pp. 2–3) Rather, 92.7 asserts that Judge Walker has not even, as yet, defined the parameters of the specific performance he has ordered. If that is true, however, it makes all the more compelling Hanover's request that procedural dates be delayed by the ALJ. Both comity and common sense dictate that the legal status of 92.7 be crystalized before proceeding with what may very well become an empty exercise by the Commission.

8. Hanover, then, has met its various burdens here and we will vacate the ALJ's denial of Hanover's request.[4] The Broadcast Bureau is eminently correct in its support of Hanover, even though we do not inferentially accord with some of its reasoning, *to wit,* that the Commission's policy favoring settlements supports Hanover's petition. Although the law does favor settlement, no Commission precedent prevents withdrawal of settlements or negates entirely the Commission's general policy in favor of a choice between competing applicants. While we will not ignore valid state contract law, *Raul Santiago Roman, supra,* neither will we deter applicants from volitionally withdrawing prior settlement agreements. If 92.7 is enjoined by state law to specifically perform its settlement contract, we expect that the applicant will abide by that law. *Cf. Uniform Policy on Violation of Laws,* 42 FCC 2d 399 (1951).

9. ACCORDINGLY, IT IS ORDERED, That the petition of Hanover Radio, Inc., IS GRANTED; and

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[3] Hanover also points out (*Petition* at p. 7 n. 8) that "[o]f 2,257 petitions for review of lower court actions filed with the Virginia Supreme Court last year only 271 were even heard."

[4] We note that at the August 27, 1982 prehearing conference, the ALJ indicated that in ruling on the settlement agreement he intended to consider the parties' proposed findings concerning such matters as 92.7's minority ownership and the outstanding character issues against it. In our judgment, this view of the public interest standard for approving setlements is too broad. Neither the ALJ nor the parties cite any case in which the comparative qualifications of the dismissing applicant were considered relevant in evaluating a proposed settlement agreement, and certainly the irrelevance of examining a dismissing applicant's character qualifications is now well-established. *Allegan County Broadcasters, Inc.,* 83 FCC 2d 371 (1980).

10. IT IS FURTHER ORDERED, That the matter IS REMANDED to the Administrative Law Judge for further action not inconsistent with this order.

FEDERAL COMMUNICATIONS COMMISSION

Norman B. Blumenthal,
Member, Review Board

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